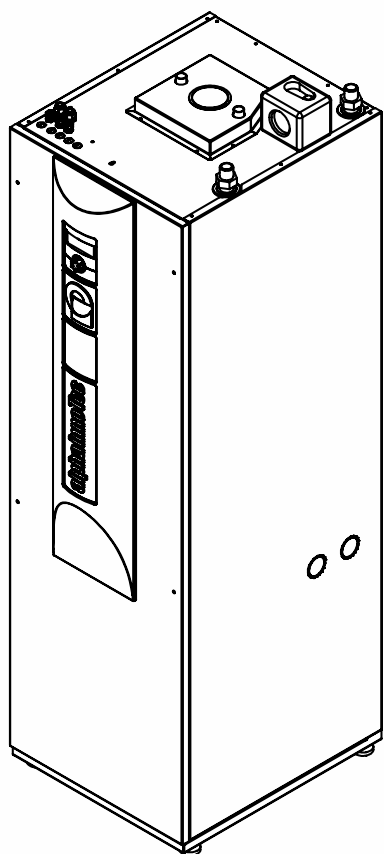
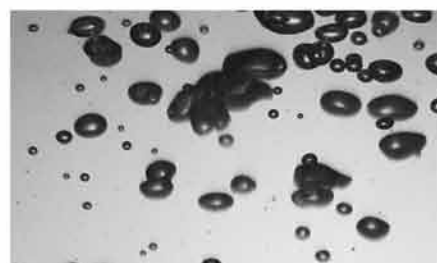
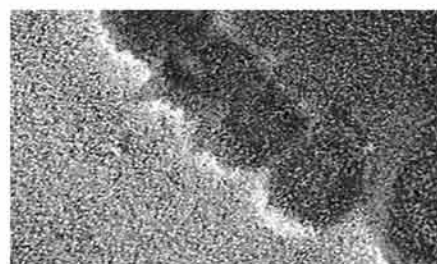


BRINE/WATER HEAT PUMPS

Heat station brine



WZS Series





Please read first

This operating manual provides important information on the handling of the unit. It is an integral part of the product and must be stored so that it is accessible in the immediate vicinity of the unit. It must remain available throughout the entire service life of the unit. It must be handed over to subsequent owners or operators of the unit.

Read the operating manual before working on or operating the unit. This applies in particular to the chapter on safety. Always follow all instructions completely and without restrictions.

It is possible that this operating manual may contain instructions that seem incomprehensible or unclear. In case of questions or uncertainty, contact the factory customer service department or the manufacturer's local service partner.

Since this operating manual was written for several different models of the unit, always comply with the parameters for the respective model.

This operating manual is intended only for persons assigned to work on or operate the unit. Treat all constituent parts confidentially. The information contained herein is protected by copyright. No part of this operating manual may be reproduced, transmitted, copied, stored in electronic data systems or translated into another language, either wholly or in part, without the express written permission of the manufacturer.

Symbols

The following symbols are used in the operating manual. They have the following meaning:



Information for operators.



Information or instructions for qualified technicians.



DANGER!

Indicates a direct impending danger resulting in severe injuries or death.



WARNING!

Indicates a possibly dangerous situation that could result in severe injuries or death.



CAUTION!

Indicates a possibly dangerous situation that could result in medium or light injuries.



ATTENTION

Indicates a possibly dangerous situation, which could result in property damage.



NOTICE.

Emphasized information.



ENERGY SAVING TIP

Indicates suggestions that help to save energy, raw materials and costs.



Reference to other sections of the operating manual.



Reference to other instructions of the manufacturer.



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Intended use

The unit may be used only for the intended use. This means:

- for heating.
- for heating hot water.
- for cooling.
(Availability of the cooling function depends on the model).



“Cooling function” section.

The unit may be operated only within its technical parameters.



Overview “Technical data/scope of delivery”.



NOTICE.

Notify the responsible power supply company of the use of a heat pump or heat pump system.

Exclusion of liability

The manufacturer will not be liable for damage resulting from unauthorized use of the unit.

The manufacturer's liability will also be voided in the following cases:

- if work is performed on the unit and its components in a manner that does not comply with the terms of this operating manual;
- if work is performed on the unit and its components in an improper manner;
- if work is performed on the unit that is not described in this operating manual, and this work was not expressly approved in writing by the manufacturer;
- if the unit or components in the unit are modified, redesigned or removed without the express written permission of the manufacturer.

EC conformity

The unit bears the CE mark of conformity.



EC declaration of conformity

Safety

The unit is operational safe when used for the intended purpose. The construction and design of the unit conform to the state of the art, all relevant DIN/VDE regulations and all relevant safety regulations.

Every person who performs work on the unit must have read and understood the operating manual prior to starting any work. This also applies if the respective person has already worked with such a unit or a similar unit or has been trained by the manufacturer.

Every person who performs work on the unit must comply with the applicable accident prevention and safety regulations. This applies in particular to the wearing of personal safety gear.



DANGER!

Danger of fatal injury due to electric current!

Electrical connections may be installed only by qualified electricians.

Before opening the unit, disconnect the system from the power supply and secure it from being switched back on!



WARNING!

Only qualified technicians (trained heating, cooling, refrigerant and electrical technicians) may perform work on the unit and its components.



DANGER!

Unit contains refrigerants!



WARNING!

Leaking refrigerant could result in personal injury or material damage.

- Shut down unit.
- Ventilate installation location.
- Notify the manufacturer's authorized service center.



ATTENTION

For safety reasons: Never disconnect the unit from the power supply, unless the unit is being opened.

Customer service

For technical assistance, please contact your qualified technician or the manufacturer's local service partner.



Overview "Customer service".

Warranty / Guarantee

For warranty and guarantee conditions, please refer to the purchase documents.



NOTICE.

Please contact your dealer concerning warranties and guarantees.

Disposal

When decommissioning the unit, always comply with applicable laws, directives and standards for the recovery, recycling and disposal of materials and components of cooling units.



"Dismantling".



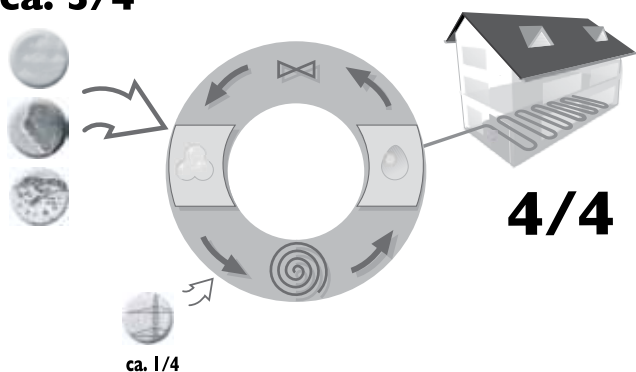
Operating principle of heat pumps

Heat pumps operate on the principle of a refrigerator: the same technology, only with the opposite effect. The refrigerator extracts heat from foods, which is released into the room through fins on the back.

The heat pump extracts heat from our environment: air, earth or ground water. The extracted heat is conditioned in the unit and supplied to the heating water. Even when it is extremely cold outside, the heat pump draws enough heat to heat a house.

Example: drawing of a brine/water heat pump with floor heating:

ca. 3/4



ca. 1/4

$\frac{4}{4}$ = usable energy
 ca. $\frac{3}{4}$ = environmental energy
 ca. $\frac{1}{4}$ = external electrical energy

Area of utilization

Taking into consideration the ambient conditions, limits of application and the applicable regulations, every heat pump can be utilized in new or existing heating systems.



Overview "Technical data/scope of delivery".

Heat quantity recording

In addition to the proof of the unit's efficiency, EEWAermeGalso meets the demand for a heat quantity recording (hereafter referred to as HQR). The HQR is mandatory with air/water heat pumps. With brine/water and water/water heat pumps, a HQR may only be set up when a forward flow temperature of $\geq 35^\circ\text{C}$ has been reached. The HQR must record the total warm energy release (heating and hot water) in the building. In heat pumps with heat quantity recording, the analysis is conducted by the regulator. The regulator displays the thermal energy that is exchanged from the heating system in kWh.



NOTICE.

Variant models are available, either with or without heat quantity recording.

Operation

Your decision to purchase a heat pump or a heat pump system is a long-term contribution to protecting the environment through low emissions and reduced primary energy use.

You can operate and control the heat pump system with the control element of the heating and heat pump regulator.



NOTICE.

Make sure that the control settings are correct.



Operating manual of the heating and heat pump regulator.

To ensure that your heat pump or heat pump system operates efficiently and ecologically, the following are especially important:



ENERGY SAVING TIP

Avoid unnecessarily high flow temperatures. A lower flow temperature on the hot water side increases the efficiency of the system.



ENERGY SAVING TIP

When letting in fresh air, do not leave windows open for an extended period in order to save energy and reduce your heating costs.



Cooling function

The cooling function is available only for heat pumps with the **model designator K**.

It is not possible to retrofit heat pumps for cooling without this designator. For the model designator, please refer to the purchase documents. It is also on the rating plate attached to the outside of the unit.



The cooling function is based on the principle of passive cooling. An existing low temperature level is mixed to a temperature above the dew point and transferred to the heating medium by means of a heat exchanger. The heat pump remains switched off during cooling; only the circulating pumps for the heating circuit and the heat source are in operation.

The cooling power depends on the heat source temperature, which varies seasonally. For example, if the ground stored more heat toward the end of the summer, the cooling power of a brine/water pump is reduced.

The effectiveness of passive cooling is generally not comparable to that of an air conditioning system.

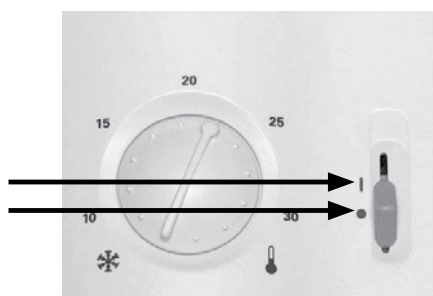


NOTICE.

The use of the passive cooling function requires floor or wall heating.

THE ROOM THERMOSTAT FOR THE COOLING FUNCTION

The room thermostat is used to switch the cooling function on and off:



- I Cooling function on
- Cooling function off

UTILIZATION OF THE COOLING FUNCTION

The heating and heat pump regulation program activates the cooling function only if the following conditions are fulfilled:

- Heat pump model must have integrated cooling function.
- Room thermostat for the cooling function must be switched on.
- Temperature of the heat source must be $\geq +5^\circ\text{C}$.
- Heat pump must not currently be occupied with “heating” or “water heating”.
If the heat pump regulation program sends the command “water heating” to the heat pump, the cooling function of the heat pump automatically stops as long as the water is heating.
- The “Automatic” setting must be selected on the control element under “Operating mode: cooling”.
- The outdoor temperature release set on the control element must be exceeded.



Operating manual of the heating and heat pump regulator.

The cooling function can be used in two variants:

Variant 1:

Manual switching from heating to cooling operation (and vice versa). This variant operates at a pre-set forward flow temperature.



Operating manual of the heating and heat pump regulator.

Variant 2:

Automatic switching from heating to cooling operation (and vice versa). This variant can operate using a cooling curve.



NOTICE.

Variant 2 is possible only if a Comfort board (available at extra charge) is built into the heating and heat pump regulator.



Comfort board operating manual.



Care of the unit

The outer surfaces of the unit can be cleaned with a damp cloth and household cleaning products.

Do not use cleaning or care products that contain abrasives, acids and/or chlorine. Such products would destroy the surfaces and could also damage the technical components of the unit.

Maintenance of the unit

The cooling circuit of the heat pump requires no regular maintenance.

According to EU regulation (EC) 842/2006 of May 17, 2006, leak inspections and maintenance of a log book are required by law for certain heat pumps!

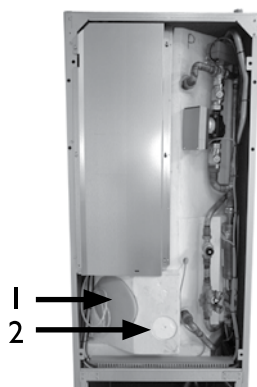
The criteria for conducting leak inspections and maintaining a log book are based on the hermetic impermeability of the cooling circuit and the refrigerant capacity of the heat pump! No log book is required for heat pumps with a refrigerant capacity of < 3kg. With all other heat pumps, the log book is included with all other delivered materials.



Log book for heat pumps, Section "Information on use of the log book".

The components of the heating circuit and the heat source (valves, expansion vessels, circulating pumps, filters, dirt traps) should be inspected as well as cleaned as needed - at the very least annually - by a qualified heating or cooling system technician.

The hot water tank should be cleaned once each year by a qualified technician. To do this, first empty the hot water tank. Then remove the Styrofoam guard through the service hole of the hot water tank. Screw off the flange cover of the service hole.



- 1 Hot water tank service hole (under foam cover)
- 2 Hot water tank emptying valve (under foam cover)

Check the safety valve (provided by customer) for the hot water tank at regular intervals. Since an external current anode is built in, the anode requires no maintenance.

It is a good idea to have a maintenance contract with a heating installation company. The company will conduct all required maintenance at regular intervals.

CLEANING AND RINSING OF UNIT COMPONENTS



CAUTION!

Unit components may be cleaned and rinsed only by customer service personnel authorized by the manufacturer. Use only liquids recommended by the manufacturer.

Rinsing of the liquefier with chemical cleaning agents must be followed by neutralization of residue and intensive rinsing with water. Always observe the technical data of the manufacturer of the heat exchanger.

Malfunctions

In the event of a malfunction, you can detect the cause of the malfunction via the diagnostic program of the heat pump and heating regulator.



Operating manual of the heat pump and heating regulator.



DANGER!

Service and repair work on the components of the unit may be performed only by customer service personnel authorized by the manufacturer.



Overview "Customer service".

Note that no fault is displayed if the safety temperature limiter has triggered at the heating element (depends on device).

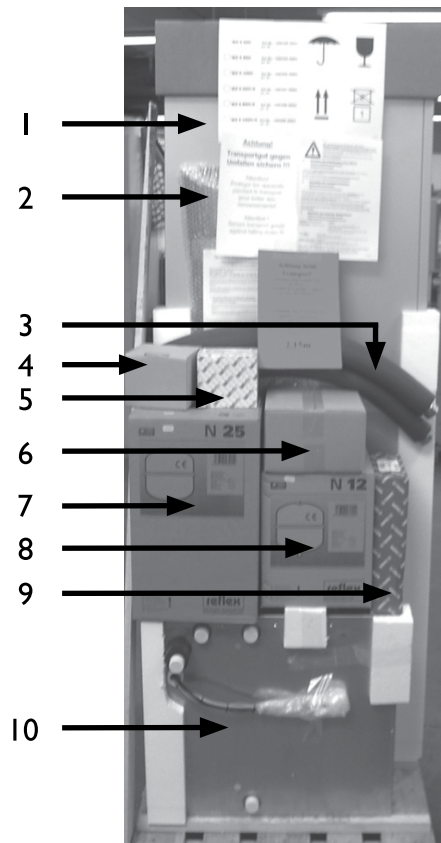


Commissioning", "Safety temperature limiter" section.



Scope of delivery

Example of scope of delivery:



- 1 Compact unit with integrated hot water tank, electric heating element, integrated circulating pump heating circuit and sensors
- 2 Screen
- 3 Vibration decouplers for heat source connection
- 4 Control element of the heating and heat pump regulator
- 5 Safety component for heating circuit
- 6 Package with 4 feet, 1 outdoor sensor, 1 insulating set, 2 ball valves (model with designator K: 1 ball valve), 8 seals, 1 service hose, 1 cap valve, 1 mount for expansion vessel of heating circuit, (model with cooling function: room thermostat)
- 7 Expansion vessel of heating circuit, 25 l
- 8 Expansion vessel of heat source, 12 l
- 9 Connection assembly for heat source
- 10 Module box with integrated circulating pump of heat source

Proceed as follows:

- ① Inspect delivery for outwardly visible signs of damage...
- ② Check to make sure that delivery is complete. Any defects or incorrect deliveries must be claimed immediately.



NOTICE.

Note the model.



Overview "Technical data/scope of delivery" or rating plate on unit.

Installation and assembly

Observe the following when performing all work:



NOTICE.

Always comply with applicable accident prevention regulations, statutory regulations, ordinances and directives.



WARNING!

The heat pump or heat pump system may be installed and assembled only by a qualified technician!



NOTICE.

Observe the sound levels of the respective model.



Overview "Technical data/scope of delivery", "Sound" section.

INSTALLATION AREA



ATTENTION

Install the unit **only indoors**.

The installation area must be frost-free and dry. It must meet the requirements of DIN EN 378. It must also fulfill applicable local regulations.



TRANSPORT TO INSTALLATION LOCATION

To avoid damage during transport, you should transport the unit to the final installation location (secured on a wooden pallet) using a lifting truck.

If it is not possible to transport the unit to the final installation location using a lifting truck, you can also transport the unit using a hand truck.



DANGER!

Several people are required to transport the unit. Do not underestimate the weight of the units.



Overview "Technical data/scope of delivery", "General unit data" section.



CAUTION!

Wear safety gloves.



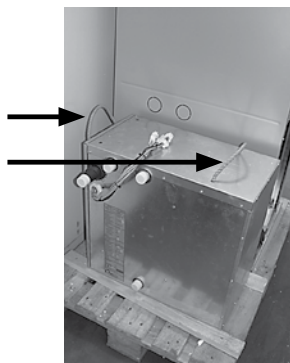
DANGER!

Unit is not fastened to the wooden pallet. The unit can tip when being lifted down and during transport with a hand truck. This can result in personal injury and damage to the unit.

- Take suitable precautionary measures to eliminate the danger of tipping.

Proceed as follows if transport with a lifting truck is not possible:

- ① Remove packaging and transport material. Remove extra box and module box from the wooden pallet and bring to installation location...
Use straps to lift and carry the module box...



ATTENTION

Do not tilt the module box more than a maximum of 45° (in any direction).



ATTENTION

Never use components, pipes of the cooling circuit or hydraulic connections on the module box for transport purposes.



ATTENTION

Do not damage the hydraulic connections under any circumstances.

Dispose of angle bracket, transport and packaging material properly and in accordance with ecological principles.



We recommend removing the front panel to reduce the weight of the unit for further transport...

Loosen quick-release screws for the front panel. Turn counter-clockwise 90°...



Lift front panel and set aside in a safe place...



DANGER!

The carrying strap attached to the back of the unit is an aid for tipping the unit onto a hand truck! Always secure the unit on the hand truck with a tension belt!

The carrying strap can also be used as a transport aid so that the unit without the module box can be carried by two persons (see illustration)!

Do not lift or transport the unit using only the strap!

- The strap could break!
- Persons could be injured!
- Persons beneath the load could be fatally injured!
- The unit and other objects could be damaged!



Transport unit to installation location using a hand truck or have two persons carry it...



ATTENTION

Do not damage the hydraulic connections under any circumstances.

- Push hand truck only beneath back of unit for transport.

**NOTICE:**

Without the module box, the unit can be transported horizontally.



- 1 Recessed grips
- 2 Carrying strap

**CAUTION.**

Never use components and hydraulic connections on the unit for purposes of transport.

INSTALLATION**DANGER!**

Several people are required to install the unit. Do not underestimate the weight of the unit.

**NOTICE.**

The heat source can be connected either on the left or right side of the unit. Maintain the required clearance between the connection side and the wall.



“Installation of the hydraulic connections”, “Connection of module box to the heat source” section.

**ATTENTION**

Always comply with required clearance dimensions.



“Dimensional drawings” and “Clearance dimensions” overviews.

Proceed as follows at the installation location:

**ATTENTION**

Set unit on a solid and level, preferably sound-insulated surface.

- ① Mount feet...

**ATTENTION**

Moving the unit without the feet mounted can damage the floor.

Mount the feet before installing the module box in the unit.

Proceed as follows to mount the feet on the unit:

- ①•①

Tip the unit slowly and carefully to one side...

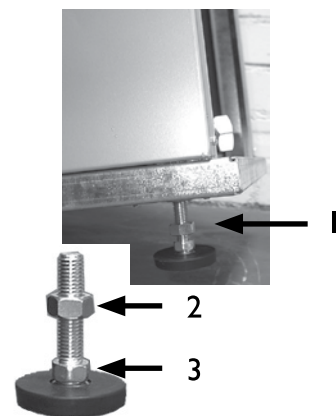
Secure unit in raised position so that it cannot accidentally tip back into the original position...

**CAUTION!**

Hands and fingers could be crushed during the following tasks!

- ①•②

Mount one foot each on the front and back of the unit...



- 1 Foot
- 2 Lock nut
- 3 Adjusting screw

- ①•③

Slowly and carefully tip the unit back into the original position...

- ②•④

Repeat procedure on the other side of the unit...

- ② Place unit at final installation location. Compensate for minor unevenness using the four adjusting screws. Then tighten the lock nuts.



INSTALLATION OF THE MODULE BOX

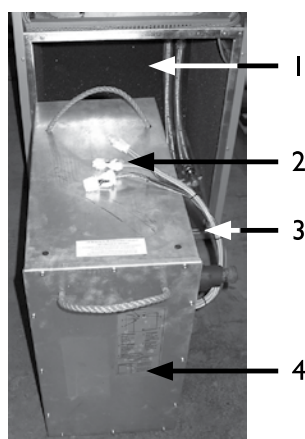
The entire cooling circuit of the heat station is contained in the module box.

! ATTENTION

Do not tilt the module box more than a maximum of 45° (in any direction).

Proceed as follows:

- ① Place module box in front of the unit...

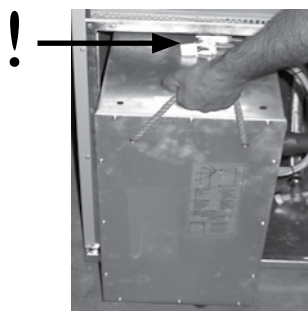


- 1 Unit
- 2 Plug for electrical connection
- 3 Front edge of bottom of unit
- 4 Module box

- ② Use straps to lift module box and initially place in unit so that the rubber feet of the module box that are facing the unit come to rest on the centering plate behind the front edge of the bottom of the unit...

- ③ Push module box into the unit until the front rubber foot of the module box contacts the front edge of the bottom of the unit and has to be lifted over it...

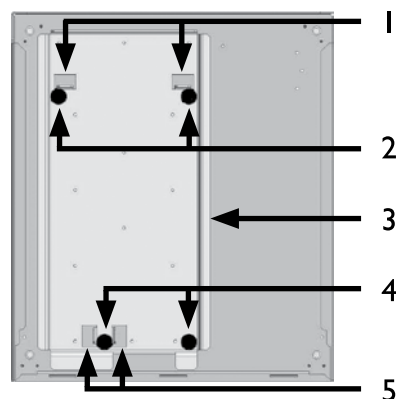
When pushing in the box, make sure that the plugs for the electrical connection are not pinched and damaged.



- ④ Raise module box, push it further into the unit and lower the box as soon as the rubber feet contact the corresponding stops of the centering plate...

Set the front left rubber foot of the module box **between** the guide elements...

The module box is positioned correctly in the unit when the rubber feet are placed as shown in the following sketch:



- 1 Stops on centering plate
- 2 Rear rubber feet of module box
- 3 Centering plate for module box on bottom of unit
- 4 Front rubber foot of module box
- 5 Guide element



ATTENTION

Once the module box has been placed in the unit, it can no longer be transported.

INSTALLATION OF THE HYDRAULIC CONNECTIONS



ATTENTION

The heat source system must be designed according to the specifications of the heat pump guide.




Heat pump guide and "Hydraulic connection" instructions.



NOTICE.

Check to make sure that the diameters and lengths of the pipes for the heating circuit and the heat source are sufficiently dimensioned. The free compression of the circulating pumps must be able to deliver at least the minimum flow rate required for your model.



 Overview “Technical data/scope of delivery”, “Heat source” and “Heating circuit” sections.



DANGER!

Danger of fatal injury due to electric current!

Before opening the unit, disconnect the system from the power supply and secure it from being switched back on!

Proceed as follows:

- ① Install shut-off devices at the heating circuit...
- ② Install shut-off devices at the heat source...



NOTICE.

During installation of the shut-off devices, the evaporator and liquefier of the heat pump can be rinsed, if necessary.



CAUTION!

The condenser may be rinsed only by customer service personnel authorized by the manufacturer.



ATTENTION

During connection of components, secure connections on the module box and on the compact unit against twisting in order to prevent damage to the copper pipes in the inside of the module box and the compact unit.

- ③ Place a bleeder at the highest point of the heat source in the heat source outflow...

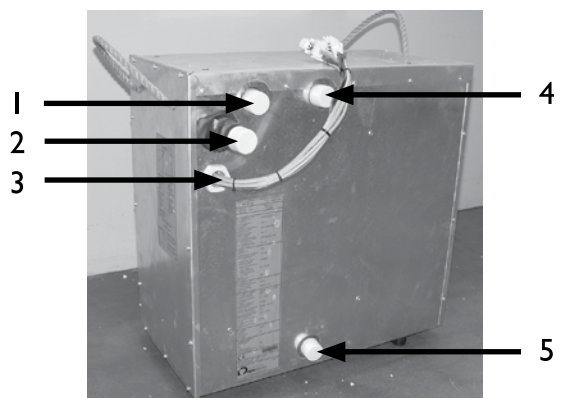
If necessary, place a bleeder at the highest point of the heat source in the heat source inflow...

- ④ Place a bleeder at the highest point of the heating circuit in the heating circuit outflow (forward flow)...

If necessary, place a bleeder at the highest point of the heating circuit in the heating circuit inflow (return flow)...

- ⑤ We recommend installing a contamination filter (screen size 0.9 mm) on the heat source inflow connection...

CONNECTIONS ON THE MODULE BOX



- 1 Heat source inflow
- 2 Heat source outflow
- 3 Electric/sensor lines
- 4 Heating circuit outflow (forward flow)
- 5 Heating circuit inflow (return flow)

CONNECTING THE MODULE BOX TO THE HEATING CIRCUIT

The vibration decouplers for the connection of the heating circuit to the module box are pre-mounted in the unit. They are located to the right of the module box after it has been inserted.

Proceed as follows:

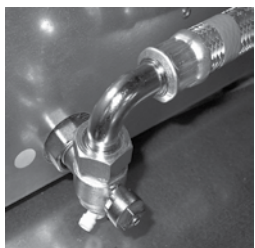
- ① Remove two seals from the extra box and place them in the angle ball valves...
- ② Screw angle ball valves of the vibration decouplers to the heating circuit connections...



Heating circuit outflow (forward flow) connection



Heating circuit inflow (return flow) connection for models without cooling function.



Heating circuit inflow (return flow) connection for models with cooling function.



NOTICE.

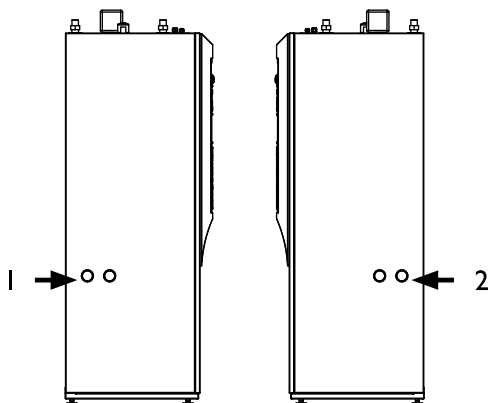
Always note which is the inflow (return flow) and outflow (forward flow) of the heating circuit. They are marked with colors, as are the vibration decouplers:

red = hot water outflow (forward flow)

blue = hot water inflow (return flow)

CONNECTING THE MODULE BOX TO THE HEAT SOURCE

Vibration decouplers are included for the connection to the pipes of the heat source. They must be installed in order to prevent damage from vibrations to the pipes. The pipes of the heat source can be connected either on the right or left side of the unit.



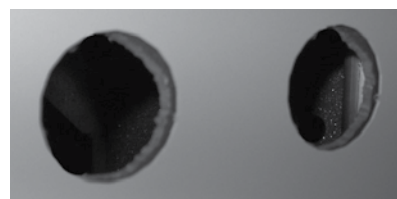
1 Connection on left side of unit

2 Connection on right side of unit

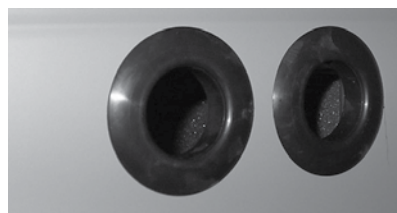
- ① Cut out round plates on the desired connection side...



- ② Make sure that no metal burrs remain. Cut foam with a knife...



- ③ Insert included plastic rosettes in the holes...



- ④ Insert vibration decouplers in unit from outside and guide them inside the unit to the connections on the module box.



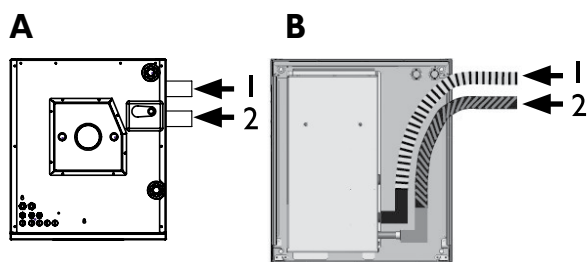


CONNECTION OF THE VIBRATION DECOUPLERS ON A UNIT WITHOUT COOLING FUNCTION

Proceed as follows:

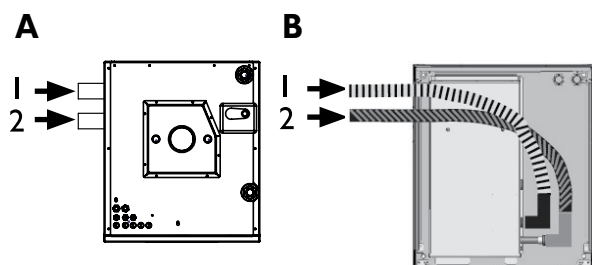
- ① Arrange vibration decouplers in a quarter circle in the unit to the connections on the module box...

Example of hose installation for connection on right side of unit



- A Top view of outside of unit
- B Top view of inside of unit
- 1 Heat source inflow
- 2 Heat source outflow

Example of hose installation for connection on left side of unit:



- A Top view of outside of unit
- B Top view of inside of unit
- 1 Heat source inflow
- 2 Heat source outflow

- ② Screw included angle ball valves to vibration decouplers. Use seals from the extra box...
- ③ Screw angle ball valves to the connections provided on the module box. Use seals from the extra box...

! ATTENTION

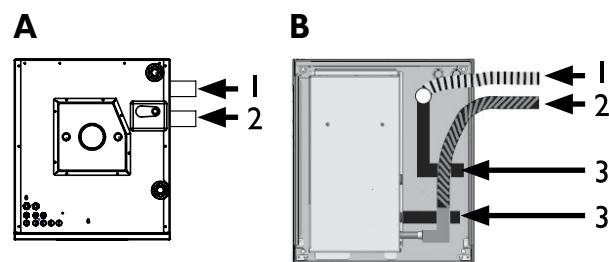
When tightening the connections on the module box, always secure connections against twisting.

CONNECTION OF THE VIBRATION DECOUPLERS ON A UNIT WITH COOLING FUNCTION

Proceed as follows:

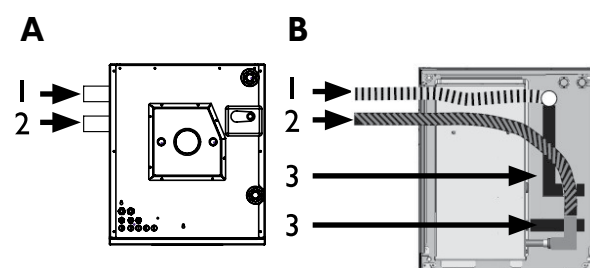
- ① Arrange vibration decouplers in a quarter circle in the unit...

Example of hose installation for connection on right side of unit:

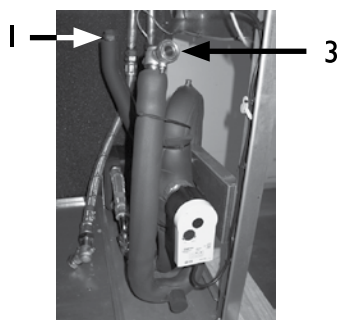


- A Top view of outside of unit
- B Top view of inside of unit
- 1 Heat source inflow
- 2 Heat source outflow
- 3 Connecting pipe to and from cooling function for heat source inflow

Example of hose installation for connection on left side of unit:



- A Top view of outside of unit
- B Top view of inside of unit
- 1 Heat source inflow
- 2 Heat source outflow
- 3 Connecting pipe to and from cooling function for heat source inflow



- 1 Connection of heat source inflow to cooling function (not insulated at time of delivery)
- 2 Connection of heat source inflow from cooling function to module box (not insulated at time of delivery)

- ② Screw vibration decoupler (with elbow) of heat source inflow to provided connecting pipe. Use seals from the extra box...



- 1 Vibration decoupler without elbow
- 2 Vibration decoupler with elbow

- ③ Screw included angle ball valve to vibration decoupler (without elbow) of heat source outflow. Use seals from the extra box...
- ④ Screw angle ball valve to the connection for the heat source outflow on the module box. Use seals from the extra box.

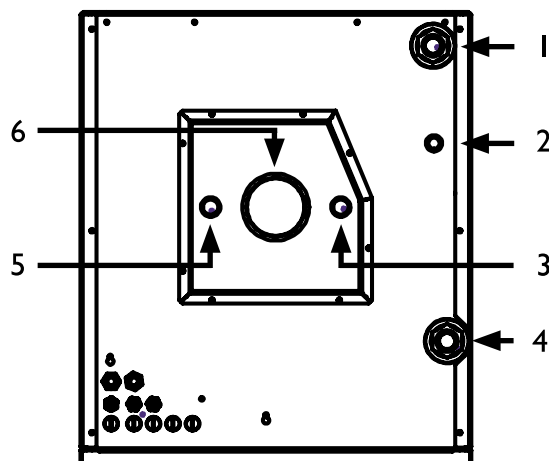


ATTENTION

When tightening the connections on the module box and the connecting pipe, always secure connections against twisting.

CONNECTING THE COMPACT UNIT TO THE HEATING CIRCUIT

The connections for the pipes of the heating circuit and the hot water supply are located on the top of the unit.



- 1 Heating circuit inflow (return flow)
- 2 Connection for heating circuit safety component
- 3 Hot water connection, warm
- 4 Heating circuit outflow (forward flow)
- 5 Hot water connection, cold
- 6 External current anode (under plastic cap)

Proceed as follows:

- ① Bleeding valves have to be installed above the heat station for connection of the heating circuit and the hot water supply...
- ② Connect hot water tank according to DIN 1988 and DIN 4753, Part I (or the local applicable standards and directives).



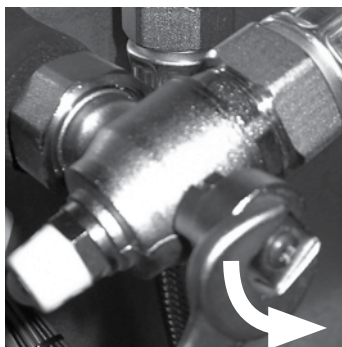
ATTENTION

Do not exceed the operating pressures specified on the rating plate. Install a pressure reducer, if necessary.



OPENING THE ANGLE BALL VALVES ON THE MODULE BOX

Open all angle ball valves on the module box by turning them 90° counter-clockwise.



SAFETY COMPONENT

The safety component for the heating circuit is in the extra box.

Proceed as follows:

- ① Mount the safety component on the connection provided on the top of the unit....
- ② The safety drain of the safety valve must lead into the drain via a funnel siphon in accordance with the applicable standards and regulations.

EXPANSION VESSELS

The expansion vessel of the heat source is included in delivery and must be installed with the connection assembly.

The expansion vessel for the heating circuit, the corresponding cap valve and the wall mount are included in the scope of delivery. They must be integrated in the heating circuit on-site in compliance with the applicable standards and directives.

We recommend installing a suitable expansion vessel (not included in delivery) in the hot water circuit. This equalizes pressure fluctuations or water shocks in the cold water network and prevents unnecessary loss of water.

Electrical connections

Observe the following when performing all work:



DANGER!

Danger of fatal injury due to electric current!

Electrical connections may be installed only by qualified electricians.

Before opening the unit, disconnect the system from the power supply and secure it from being switched back on!



DANGER!

Observe the relevant EN, VDE and/or applicable local safety regulations during the installation and during all electrical work.

Comply with technical connection requirements of the responsible power supply company (if required by the latter)!



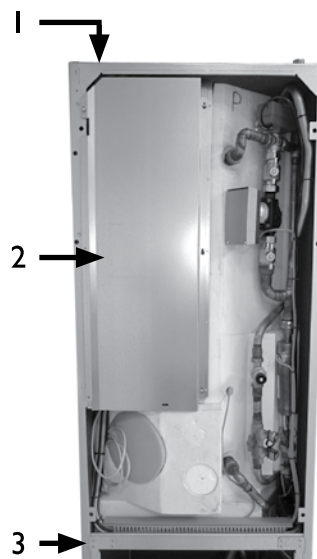
NOTICE.

All live wires must be stripped before they are installed in the cable duct of the switch cabinets!

- ① Remove front panel of unit, if necessary...



Transport to installation location, ②.



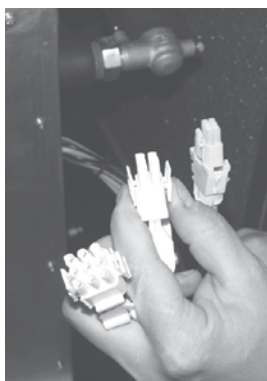
- 1 Ducts for electric/sensor cables with strain relief screws
- 2 Electrical switch cabinet
- 3 Intermediate floor of unit



- ② Connect connecting plug of module box...

! ATTENTION

Insert all three connecting plugs of the module box in the plug-in connections on the bottom of the intermediate floor of the unit. Watch out for retaining nose. Plugs must be mounted for easy movement.



- ③ Open electrical switch cabinet of unit...

To do this, only loosen the two upper screws of the cover plate. Remove the remaining screws. Now the cover plate can be removed...

- ④ Insert load lines and external control and sensor wires in unit through holes at top for electric/sensor wires. Guide wires via the cable duct to the terminals. Tighten strain relief screws...

- ⑤ Install electrical connections according to the terminal diagram and the circuit diagrams...



"Terminal diagram" and "Circuit diagrams".



DANGER!

Install electric connections only according to the terminal diagram and the circuit diagrams that apply to your model.

! ATTENTION

Ensure clockwise rotary field of the load power supply (compressor).

- An incorrect rotary field of the compressor during operation can cause serious, irreparable damage to the compressor.



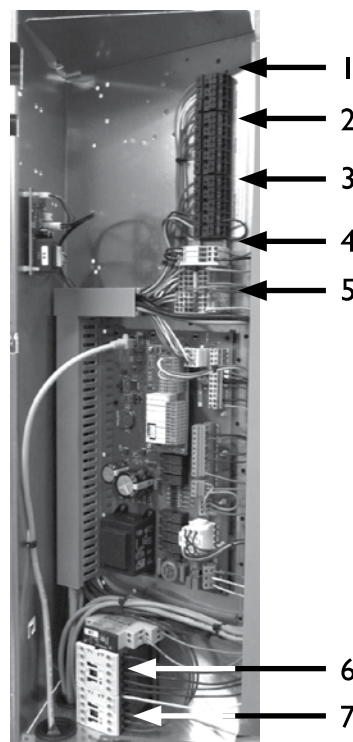
ATTENTION

Make sure to equip the power supply of the heat pump with a **3-pole automatic cut-out with at least 3 mm contact gap**.

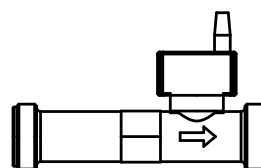
Note the level of the release current.



Overview "Technical data/scope of delivery", "Electric" section.



- 1 Connection for control unit
- 2 Connection for output compressor 3PE
- 3 Connection for additional heating 3NPE
- 4 N/PE
- 5 Only for units with cooling function:
3 additional terminals for room thermostat and dew point sensor
- 6 Contactor for compressor
- 7 Contactor for heating element



ATTENTION

The sensor cable for heat quantity recording may not be shortened!



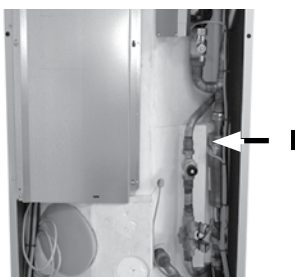
1 NOTICE.

The control element of the heat and heat pump regulator can be a connection with a computer or network using an network cable designed for such purposes, thus allowing the heating and heat pump regulator to be controlled remotely. If such a connection is desired, install a screened network cable (category 6, with RJ-45 plug) through the unit when installing the connections and run it through the front facade of the unit, parallel to the already-present heating and heat pump regulator control cable.

1 NOTICE.

Electric heating element is connected for 6 kW at factory. It can be connected for 2 or 4 kW on the contactor.

For further information, see the adhesive label on the electric heating element.



1 Adhesive label on electric heating element

- ⑥ After completion of all electrical installation work, close the switch cabinet inside the unit...
- ⑦ Close the front panel of the unit if no further installation work inside the unit is to be performed immediately.

Rinsing and filling the unit



DANGER!

Danger of fatal injury due to electric current!

The electric switch cabinet inside the unit must be closed with the cabinet's cover!

Proceed as follows:

- ① Open unit if this has not already been done...



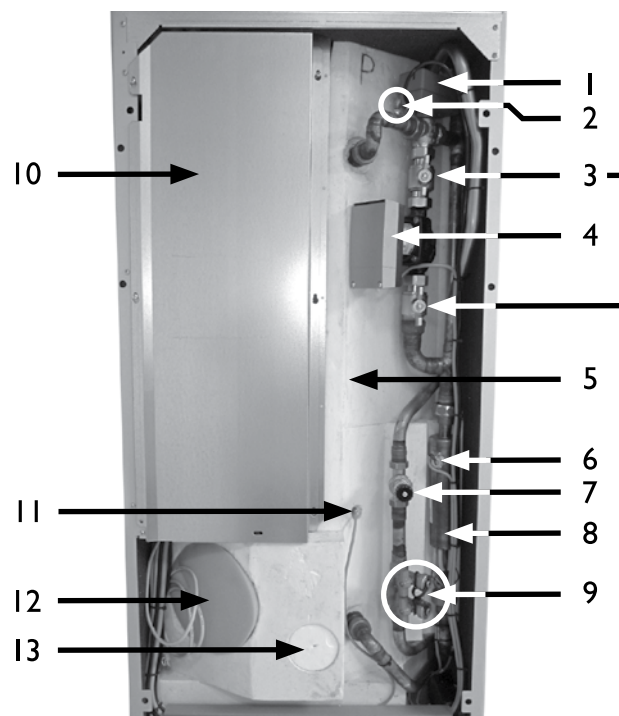
Transport to installation location, ②.

- ② Obtain overview of the interior of the unit.



DANGER!

The electric switch cabinet inside the unit must be closed with the cabinet's cover!



- 1 3-way switching valve for heating circuit/hot water
- 2 Bleeder
- 3 Pump ball valves
- 4 Circulating pump for heating circuit/hot water
- 5 Hot-water tank
- 6 Reset knob of electric heating element
- 7 Overflow valve
- 8 Electric heating element
- 9 Rinsing ball valve
- 10 Electrical switch cabinet
- 11 Sensor for hot water tank
- 12 Hot water tank service hole (under foam cover)
- 13 Hot water tank emptying valve (under foam cover)



CLEANING AND RINSING OF UNIT COMPONENTS



CAUTION!

Unit components may be cleaned and rinsed only by customer service personnel authorized by the manufacturer. Use only liquids recommended by the manufacturer.

Rinsing of the liquefier with chemical cleaning agents must be followed by neutralization of residue and intensive rinsing with water. Always observe the technical data of the manufacturer of the heat exchanger.

RINSING AND FILLING THE HEAT SOURCE

Contamination and deposits in the heat source can cause malfunctions.

Proceed as follows:

- ① Rinse heat source system thoroughly...
- ② Thoroughly mix the anti-freeze agent, available as an accessory, with water at the required ratio. Add only anti-freeze mixed with water to the heat source...
- ③ Check concentration of anti-freeze in the mixture...



ATTENTION

The concentration of anti-freeze in the water must be at the level specified for your model.



Overview "Technical data/scope of delivery", "Heat source" section.

- ④ Fill heat source with anti-freeze mixture.

RINSING AND FILLING THE HOT WATER AND HEATING WATER CIRCUITS



ATTENTION

The system must be absolutely free from air before commissioning.

WATER QUALITY OF THE FILL AND ADDITIONAL WATER IN HOT WATER HEATING SYSTEMS

ACCORDING TO VDI 2035 PART I AND II

Use of modern, energy-efficient heat pump systems is becoming increasingly widespread. Their ingenious technology enables these systems to achieve very good efficiencies. The decreasing space available for heat generators has led to the development of compact units with increasingly smaller cross-sections and high capacities. This means the complexity of the systems and the material diversity are also increasing, which plays an important role especially in their corrosion behaviour. Alpha InnoTec ensures continuous technological advances, but all these technical refinements require the system to be operated with correctly filled heating water. The heating water not only affects the efficiency of the system, but also the life of the heat generator and the heating components of a system.

The guide values of VDI 2035 Part I and Part II must therefore be complied with as minimum requirements for proper operation of the systems. Our practical experience has shown that the safest and most trouble-free running of the systems is achieved with so-called low-salt operation.

VDI 2035 Part I gives important information and recommendations regarding scaling and its prevention in heating and domestic hot water heating systems.

VDI 2035 Part II primarily deals with the requirements for reducing heating water corrosion in hot water heating systems.

PRINCIPLES OF PART I AND PART II

The occurrence of scaling and corrosion damage in hot water heating systems is low, if

- proper planning and commissioning is carried out
- the system is closed in corrosion terms
- adequately dimensioned pressurising is integrated
- the guide values for the heating water are complied with



- and regular servicing and maintenance are carried out.

A system log should be kept, in which the relevant planning data is entered (VDI 2035).

DAMAGE THAT CAN OCCUR IN CASE OF NON-COMPLIANCE

- Malfunctions and the failure of components (e.g. pumps, valves)
- Internal and external leaks (e.g. from heat exchangers)
- Cross-section reduction and blockaging of components (e.g. heat exchanger, pipes, pumps)
- Material fatigue
- Gas bubbles and gas cushion formation (cavitation)
- Negative effect on heat transfer (formation of coatings, deposits) and associated noises (e.g. boiling noises, flow noises)

LIMESCALE – THE ENERGY KILLER

Filling with untreated drinking water inevitably leads to the precipitation of all calcium as scale. The consequence: limescale deposits form on the heat transfer surfaces of the heating. The efficiency falls and the energy costs rise. A rule of thumb is that 1 millimetre of limescale deposit causes an energy loss of 10%. In extreme cases it can even cause damage to the heat exchangers.

WATER SOFTENING TO VDI 2035 – PART I

If the water is softened before the heating is filled, in accordance with the VDI 2035 guidelines, no scale can form. This effectively and permanently prevents limescale deposits and the resulting negative effects on the entire heating system.

CORROSION – AN UNDERESTIMATED PROBLEM

VDI 2035, Part II, deals with the problem of corrosion. Softening the heating water can prove to be insufficient. The pH value can significantly exceed the limit of 10. pH values higher than 11 can set in, which even damage rubber seals. The VDI 2035, Part I guidelines are fulfilled, however, VDI 2035, Part 2 suggests a pH value between 8.2 and maximum 10.

If aluminium materials are used, which is the case in many modern heating systems, a pH value of 8.5 must not be exceeded, because otherwise there is a threat of corrosion – and aluminium is attacked without the presence of oxygen. Therefore, apart from softening

the heating fill and additional water, the heating water should also be appropriately conditioned. This is the only way to comply with the VDI 2035 requirements and the recommendations and installation instructions of the heat pump manufacturer.

Part 2 of VDI 2035 also points out the reduction in total salt content (conductivity). The risk of corrosion is far lower if deionised water is used than is the case if the system is operated with salty, i.e. softened water.

Even if the water has been softened beforehand, it contains dissolved, corrosion-promoting salts, which act as electrolytes due to the use of different materials in the heating system and therefore accelerate corrosion processes. This can ultimately result in pitting.

Contamination and deposits in the heating circuit can cause malfunctions

RINSE, FILL AND BLEED THE HEATING CIRCUIT AND HOT WATER BUFFER TANK

To bleed the hot water tank, the heating circuit and hot water circuit must be rinsed simultaneously.

ON THE SAFE SIDE WITH LOW-SALT OPERATION

The problems listed above do not occur at all with low-salt operation, as neither corrosive salts such as sulphates, chlorides and nitrates nor alkalising sodium hydrogen carbonate are in the heating water. The corrosive properties of deionised water are very low and in addition, fur cannot form in the boiler. This is the ideal approach for closed heating circuits, in particular, because low oxygen input into the heating circuit can also be tolerated.

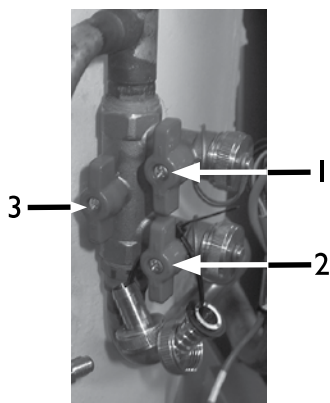
In general, when the system is filled with deionised water, the pH value sets itself within the ideal range due to “self-alkalinisation”. If necessary, a pH value of 8.2 can be very easily alkalisied by adding chemicals. In this way, optimum protection of the entire heating system is achieved.

MONITORING

Analytical recording and monitoring of the relevant water values and the added active conditioning substances is of decisive importance. Therefore, they should be monitored regularly using appropriate water test equipment.



Use the rinsing ball valves for rinsing and filling.



Picture shows operating condition at time of delivery.

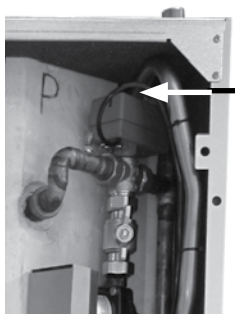
Contamination and deposits in the heating circuit can cause malfunctions.

! ATTENTION

Before rinsing and filling the device, the drain pipe of the safety valve must be connected. Do not exceed the response pressure of the safety valve.

Proceed as follows:

- ① Close rinsing ball valve 3...
- ② Connect hose for water outlet to rinsing ball valve 1 and lead to a drain...
Open rinsing ball valve 1...
- ③ Connect hose for water inlet to rinsing ball valve 2...
Open rinsing ball valve 2...
- ④ Remove the motor of the 3-way valve. To do so, remove the U-bolt on the motor base and carefully pull the motor upward...



- ⑤ Turn spindle 180° and rinse hot water circuit ca. 1 minute...

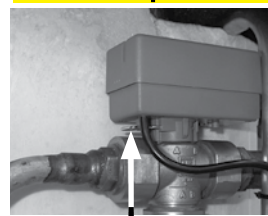
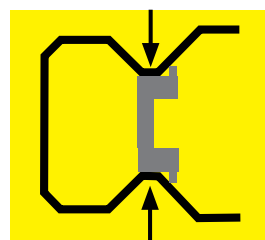
- ⑥ Turn spindle 180° back to starting position (rounded side of spindle points to B)...
- ⑦ Rinse heating circuit! If necessary, heating and hot water circuit can be rinsed at the same time! To do so, turn spindle 30°...
- ⑧ After completion of the rinsing and filling procedure, move spindle to starting position and mount the motor of the 3-way valve...



NOTICE

To ensure a good seat of the motor on the valve, make sure that the U-bolt with the reduction is not pushed past the lug, because then the motor will not be held securely on the valve!

In order to be supported securely, the U-bolt must bear with both ends against the lug:



- ⑨ Move rinsing ball valves to starting position.



RINSING, FILLING AND BLEEDING THE HOT WATER TANK

! ATTENTION

The electrical conductivity of the hot water outflow must be $> 100 \mu\text{S}/\text{cm}$ and must be comparable to water that is suitable for drinking.

! ATTENTION

Before rinsing and filling the hot water tank, the drain pipe of the safety valve must be connected. Do not exceed the response pressure of the safety valve.

Proceed as follows:

- ① Open valve for cold water inlet on the hot water tank...
- ② Open the hot water valves at the taps...
- ③ Rinse the hot water tank until air no longer emerges from the valves at the taps...
- ④ Close hot water valves at the taps

Bleeding

The unit is bled automatically when the bleeder (black cap) of the safety component of the heating circuit is open. If the heating circuit is filled or emptied, the bleeding valve of the safety component opens.

BLEEDING THE MODULE BOX

Proceed as follows:

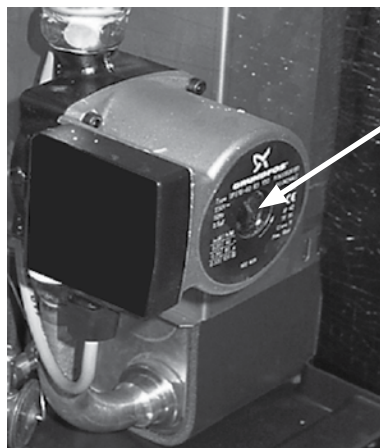
- ① Attach service hose from the extra box to the angle ball valve...
- ② Bleed bleeding valves on the four angle ball valves using the bleeding key.



BLEEDING THE CIRCULATING PUMP OF THE HEAT SOURCE

Proceed as follows:

- ① Unscrew front panel of module box...
- ② Loosen the screw-on cap in the middle of the circulating pump for the heat source...



- ③ Screw on front panel of module box after bleeding.

BLEEDING THE HEAT SOURCE FOR A UNIT WITHOUT COOLING FUNCTION

Use angle ball valves on the module box for bleeding.

BLEEDING THE HEAT SOURCE FOR A UNIT WITH COOLING FUNCTION

Bleeding must be conducted manually on the servo-motor (next to the module box).

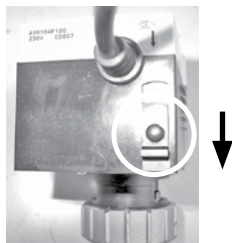


Proceed as follows:

- ① Release the servo-motor at the mixing valve inside the unit...



Push switch on servo-motor down...



② Adjust mixing valve...

Use the wrench included in the scope of delivery.
Alternatively: Use a size 6 Allen wrench.

②•①

Insert wrench in the servo-motor...



②•②

Turn wrench counter-clockwise until the regulator of the servo-motor is at 0 %...



②•③

Switch on the circulating pump of the heat source and allow to run...

②•④

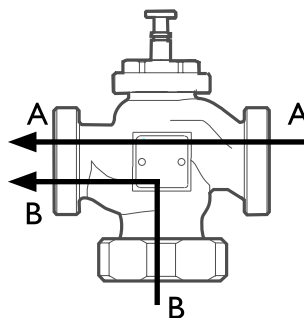
After 2 minutes, with the circulating pump running, turn wrench clockwise until the regulator of the servo-motor is at 100 %...

Leave at this setting for 2 minutes...

②•⑤

With the circulating pump running, turn wrench counter-clockwise until the regulator of the servo-motor is at 50 %...

Turning the regulator to 50 % means an even mixture in the 3-way mixing valve from A and B to AB...

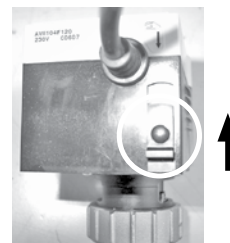


③ Reset servo-motor of the mixing valve to automatic as soon as bleeding is completed.



NOTICE.

Push switch on servo-motor up.



For units with cooling function, an additional bleeding valve is installed above the servo-motor for the heat source.





Insulating the hydraulic connections

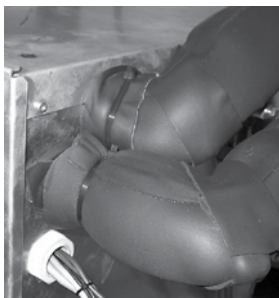


NOTICE.

Insulate the heating circuit and the heat source according to local applicable standards and directives.

The angle ball valves of the connections on the module box must be opened.

- ① Check seals of all hydraulic connections. Conduct pressure test...
- ② Remove insulation material for internal pipes from the extra box...
- ③ Insulate all connections, angle ball valves, vibration decouplers, connections and lines of the heat source in the unit so that they are **vapor diffusion-tight**...



For units with cooling function, insulate angle ball valve and connecting pipe so that they are **vapor diffusion-tight**...



Overflow valve

INSPECTING AND SETTING UP THE OVERFLOW VALVE



NOTICE.

Make sure to perform the following steps within a relatively short time. The heat pump switches to high-pressure fault if the maximum return flow temperature is exceeded.

- ① Make sure that the system is running in the heating mode (ideally in cold condition)...
With the heating curve set low, switch the system to "Forced heating"...



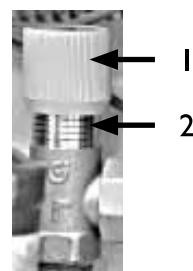
Operating manual of the heating and heat pump regulator.

- ② Shut off valves to heating circuit...
- ③ Make sure that the volume flow is channeled 100% through the overflow valve...
- ④ Read the forward flow and return flow temperatures in the heating and heat pump regulator...



Operating manual of the heating and heat pump regulator.

- ⑤ Turn the adjusting knob of the overflow valve until the temperature difference (= spread) between the forward and return flow is between 5 and 9 K...



- 1 Adjusting knob
2 Overflow valve



NOTICE.

Turning the adjusting knob:
– clockwise = increases spread.
– counterclockwise = decreases spread.

- ⑥ Open valves to heating circuit.
- ⑦ Reset the heating and heat pump regulator.



Installation of the control element



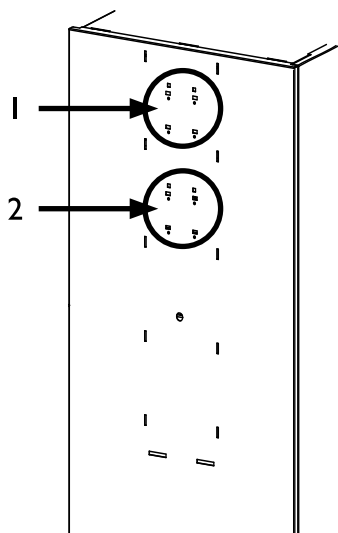
DANGER!

Danger of fatal injury due to electric current!

Electrical connections may be installed only by qualified electricians.

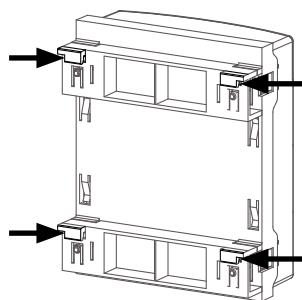
Before opening the unit, disconnect the system from the power supply and secure it from being switched back on!

Situated at different heights in the front facade of the unit are recesses (each with 4 recesses) for fastening the control element:



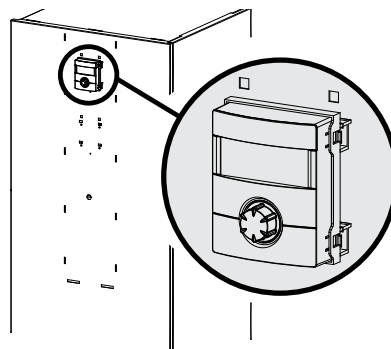
- 1 four upper recesses
- 2 four lower recesses

4 hooks are located on the back side of the control element and can be used to hang the control element on the front facade of the unit:



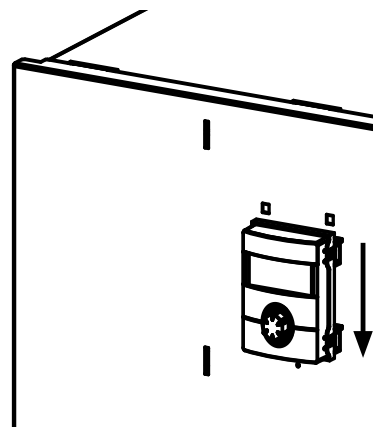
Proceed as follows:

- ① Hang the control element's hooks on the recesses of the front facade (either in the upper or lower recesses)...

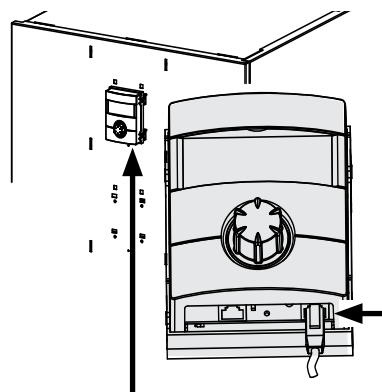


Example:
Control element in upper recesses

- ② Push the control element down until it locks into position...



- ③ Stick the heating and heat pump regulator's control cable into the **right** bushing on the bottom of the control element...





NOTICE.

A connection to a computer or a network can be installed via the left bushing on the bottom of the control element, thus allowing the heating and heat pump regulator to be controlled remotely. One pre-condition is that a screened network cable (category 6) be installed through the unit when installing the unit.



Operating manual for the heating and heat pump regulator, version "Qualified technician", "Web server" section.

If this network cable is available, insert the network cable's RJ-45 plug into the left bushing of the control element.



NOTICE.

The network cable can be exchanged at any time. In order to be able to connect it, the screen must first be removed.

Installation and removal of the screen

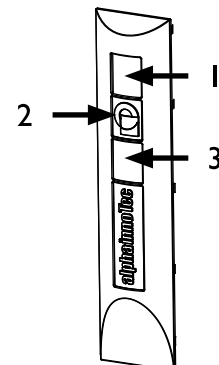
INSTALLING THE SCREEN



NOTICE.

The screen is provided at the time of delivery so that the control element may be inserted in the upper recesses of the front facade.

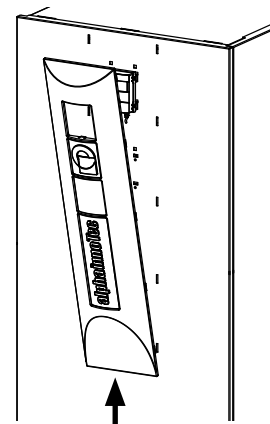
If the control element has been inserted in the lower recesses of the front facade, you must first remove the screen's temporary cover and then reinsert it above the logo.



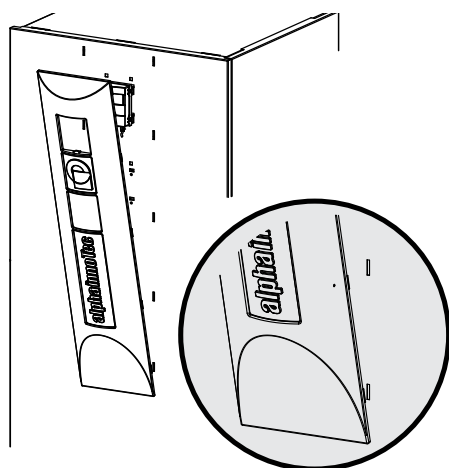
Screen at time of delivery:

- 1 recess for control element
- 2 logo
- 3 temporary cover

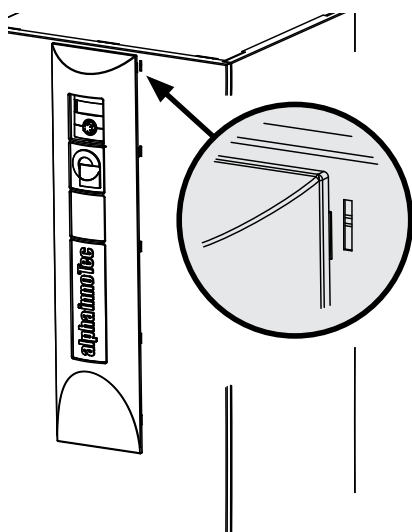
- ① First, insert the screen **below**, in the provided slots on the front of the facade...



- ② Beginning first on one side and moving upwards, lock the screen's snap-in lugs in place **in the slots** provided on the front of the facade...



- ③ **Next, on the opposite side, moving upwards.** Lock the screen's snap-in lugs **in place** in the slots provided on the front of the facade...
- ④ Finally, press the screen's upper snap-in lugs into the slots provided on the front of the facade.



REMOVING THE SCREEN

In order to remove the screen, the snap-in lugs must **first be loosened by pressing one side completely toward the middle of the screen**. Thereafter, remove the snap-in lugs from the opposite side.

Installation of the room thermostat for the cooling function

This chapter is relevant for you only if you are using a heat station with a **model designator K**.



ATTENTION

If floor heating systems are to be used for cooling, the manufacturer must approve the floor structure (especially the screed) for use of the cooling function.

Use the room thermostat of the cooling function in a reference room as a reference variable. If the temperature in the reference room falls below the set temperature, the cooling function of the heat station will automatically shut off.



Operating manual of the heating and heat pump regulator, "Cooling" chapter.



NOTICE.

You must install the room thermostat in a reference room in addition to single-room regulators.

You must install single-room regulators for switching from heating to cooling (and vice versa).



NOTICE.

Always comply with the applicable local standards and directives.

Hot-water tank

The integrated hot water tank is enameled according to DIN 4753 and is suitable for normal drinking water.



Commissioning

Proceed as follows:

- ① Conduct a thorough installation inspection and go through the items on the general checklist.



“General checklist”.

The installation inspection will prevent damage to the heat pump system that could be caused by incorrect installation work.

Make sure of the following...

- **Clockwise rotary field** of the load power supply (compressor).
- **Installation and assembly** of the heat pump according to the information in this operating manual.
- All electric installation work must be properly completed.
- A **3-pole automatic circuit-breaker** must be installed for the compressor. It must have a contact gap of at least 3 mm.
- The heating circuit must be rinsed, filled and thoroughly bled.
- All valves and shut-off devices of the heating circuit must be open.
- All pipe systems and components of the system must be sealed.

- ② Carefully fill out and sign the completion report for heat pump systems...



“Completion report for heat pump systems”.

- ③ In Germany and Austria:
Send completion report for heat pump systems and general checklist to the manufacturer's factory customer service department.

In other countries:

Send completion report for heat pump systems and general checklist to the manufacturer's local partner.



Overview “Customer service”.

- ④ The heat pump system will be commissioned by customer service personnel authorized by the manufacturer. There is a fee for commissioning!

The initial filling and commissioning of the hot water tank must be carried out by a qualified technician.

Make sure of the following...

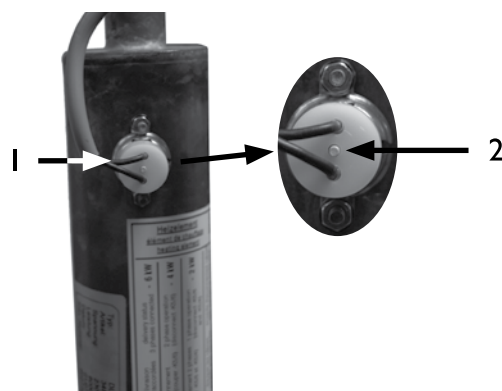
- The water supply to the hot water tank must be open.
- The hot water tank must be filled.
If the heat pump is switched on with an empty tank, the control element will indicate a malfunction.



Operating manual of the heating and heat pump regulator.

SAFETY TEMPERATURE LIMITER

A safety temperature limiter is built into the electric heating element. In the event of a malfunction in the heat pump or air in the system, check whether the reset button of the safety temperature limiter has tripped. If this is the case, push in the button.



- 1 Safety temperature button on electric heating element
- 2 Reset button



Dismantling



DANGER!

Danger of fatal injury due to electric current!

Electrical connections may be installed only by qualified electricians.

Before opening the unit, disconnect the system from the power supply and secure it from being switched back on!



DANGER!

Only qualified heating or cooling system technicians are allowed to remove the unit from the system.



CAUTION.

The anti-freeze mixture of the heat source must not be allowed to enter the sewer system. Collect anti-freeze mixture and dispose of properly.



DANGER!

Only qualified cooling system technicians are allowed to dismantle the unit and its components.



ATTENTION

Recycle or provide for proper disposal of unit components, refrigerants and oil in accordance with the applicable regulations, standards and directives.

REMOVAL OF THE BUFFER BATTERY



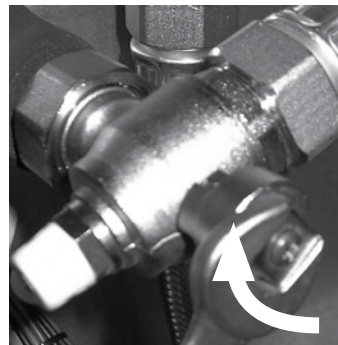
ATTENTION

Before scrapping the heating and heat pump regulator, remove the buffer battery on the processor board. The battery can be removed using a side cutter. Dispose of battery and electronic components in keeping with environmental considerations.

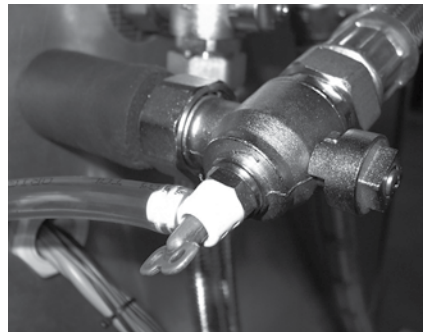
REMOVAL OF THE MODULE BOX

Proceed as follows:

- ① Remove insulation...
- ② Close angle ball valves...



- ③ Attach service hoses from the extra box to the angle ball valves...
- ④ Open bleeding valves of the angle ball valves using a bleeding key and completely empty the module box...



- ⑤ Disconnect hydraulic and electric connections...
- ⑥ Raise module box using the straps and lift and pull from the unit.





Technical data/Scope of delivery

Heat pump type	Brine/water Air/water Water/water	• applicable — not applicable
Installation location	Indoors Outdoors	• applicable — not applicable
Conformity		CE
Performance data	Heating capacity/COP at	
	B0/W35 Standard point acc. to EN14511 1 Compressor	kW ...
	B0/W45 Standard point acc. to EN14511 1 Compressor	kW ...
	B0/W35 Standard point acc. to EN255 1 Compressor	kW ...
Limits of application	Heating circuit	°C
	Heat source	°C
	Additional operating points	...
Sound	Sound level measured at distance of 1m around the device (in free field)	dB(A)
	Sound power level according to EN12102	dB
Heat source	Volume flow: minimum flow rate nominal flow rate maximum flow rate	l/h
	Pressure loss heat pump Δp (with cooling Δp_K) volume flow	bar (bar) l/h
	Free compression heat pump Δp (with cooling Δp_K) volume flow	bar (bar) l/h
	Anti-freeze agent	monoethylene glycol
	minimum concentration frost proof down to	% °C
Heating circuit	Volume flow: minimum flow rate nominal flow rate maximum flow rate	l/h
	Pressure loss heat pump Δp (with cooling Δp_K) volume flow	bar (bar) l/h
	Free compression heat pump Δp (with cooling Δp_K) volume flow	bar (bar) l/h
General unit data	Dimensions (see dimensional drawing for the specified unit size)	unit size
	Total weight (including cooling)	kg (kg)
	Additional weight module 1	kg
	Additional weight module 2	kg
	Connections Heating circuit	...
	Heat source	...
	Refrigerant Refrigerant type Quantity	... kg
Hot water tank	Net contents	l
	External current anode	integrated
	Hot water temperature	till °C
	Output 38°C 45 °C at removal of 10 l/min	l l
	Hot water tank Connections	...
Electric	Voltage code all-pole circuit breaker heat pump *)	... A
	Voltage code circuit breaker control voltage *)	... A
	Voltage code circuit breaker electric heating element *)	l A
Heat Pump	Effective power consumption in standard point B0/W35 according to EN14511: Power consumption current consumption cos ϕ	kW A ...
	Maximum device current within the limits of application	A
	Starting current: direct with soft starter	A A
	Protection type	IP
Components	Output electric heating element 3 2 1 phase	kW kW kW
	Circulating pump heating circuit at nominal flow rate: Power consumption current consumption	kW A
	Circulating pump heat source at nominal flow rate: Power consumption current consumption	kW A
Passive cooling function	Specification only for units with designator K: Cooling output at nominal volume flow (15 °C heat source, 25 °C heating water)	kW
Safety equipment	Safety component heating circuit Safety component heat source	Incl. in scope of deliv.: • yes — no
Heating and heat pump regulator		Incl. in scope of delivery: • yes — no
Electronic soft starter		integrated: • yes — no
Expansion vessels	Heat source: Scope of delivery Volume Initial pressure	• yes — no l bar
	Heating circuit: Scope of delivery Volume Initial pressure	• yes — no l bar
Overflow valve		integrated: • yes — no
Vibration decouplers	Heating circuit heat source	Incl. in scope of delivery: • yes — no

UK813195-c

*) comply with local regulations n.n. = not detectable

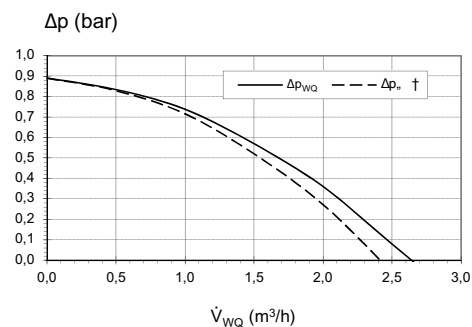
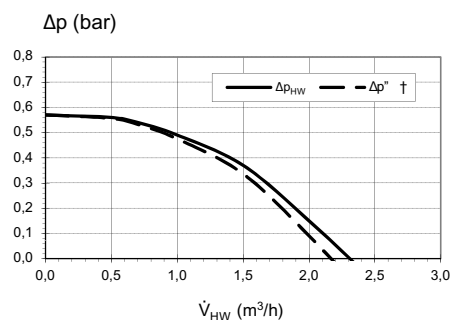
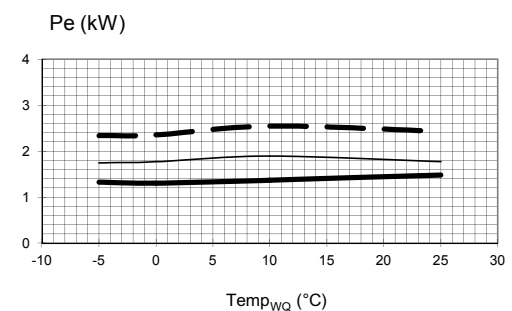
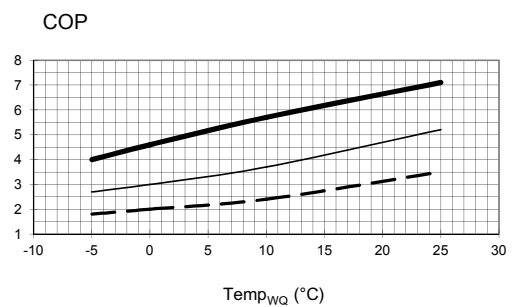
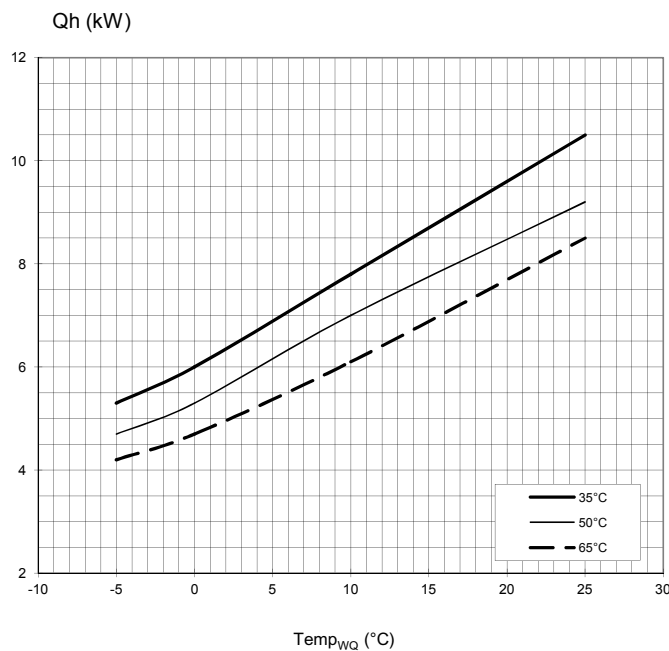


	WZS 61H(/K)	WZS 81H(/K)	WZS 101H(/K)
	• — —	• — —	• — —
	• —	• —	• —
	•	•	•
	6,0 4,6	7,7 4,6	9,6 4,7
	5,5 3,5	7,3 3,7	9,0 3,7
	—	—	—
	20 – 63	20 – 65	20 – 65
	-5 – 25	-5 – 25	-5 – 25
	B-3 / W65	—	—
	37	37	37
	49	49	49
	1100 1450 2200	1400 1900 2600	1800 2350 2900
	— —	— —	— —
	0,59 (0,55) 1450	0,44 (0,37) 1900	0,30 (0,25) 2350
	•	•	•
	25 -13	25 -13	25 -13
	500 1000 1300	660 1300 1650	800 1650 2100
	— —	— —	— —
	0,54 (0,53) 700	0,51 (0,49) 1000	0,48 (0,46) 1200
	1	1	1
	300 (307)	305 (312)	310 (317)
	215	215	215
	85	90	95
	R1*AG	R1*AG	R1*AG
	G1" ÜWM DIN ISO 228	G1" ÜWM DIN ISO 228	G1" ÜWM DIN ISO 228
	R407c 1,70	R407c 2,3	R407c 2,6
	190	190	190
	•	•	•
	55°	55°	55°
	250 210	250 210	250 210
	R 3/4" AG	R 3/4" AG	R 3/4" AG
	3~/PE/400V/50Hz C10	3~/PE/400V/50Hz C10	3~/PE/400V/50Hz C10
	1~/N/PE/230V/50Hz B10	1~/N/PE/230V/50Hz B10	1~/N/PE/230V/50Hz B10
	3~/N/PE/400V/50Hz C10	3~/N/PE/400V/50Hz C10	3~/N/PE/400V/50Hz C10
	1,30 2,6 0,72	1,67 3,2 0,75	2,04 3,8 0,78
	4,0	5,0	5,9
	27,0 —	29,0 —	30 —
	20	20	20
	6 4 2	6 4 2	6 4 2
	0,05 n.n.	0,06 n.n.	0,07 n.n.
	0,1 n.n.	0,1 n.n.	0,1 n.n.
	6,3	7,6	8,8
	• •	• •	• •
	•	•	•
	—	—	•
	• 12 0,5	• 12 0,5	• 12 0,5
	• 25 1,5	• 25 1,5	• 25 1,5
	•	•	•
	• •	• •	• •
	813407a	813408a	813409a



WZS 61H(/K)

Performance curves



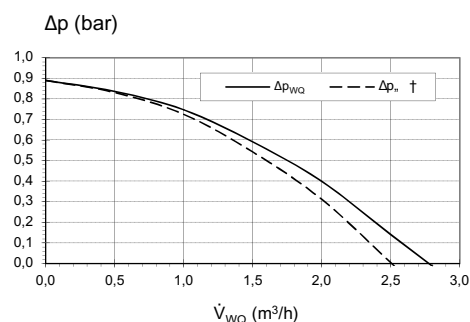
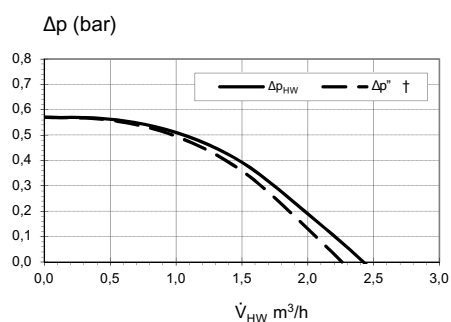
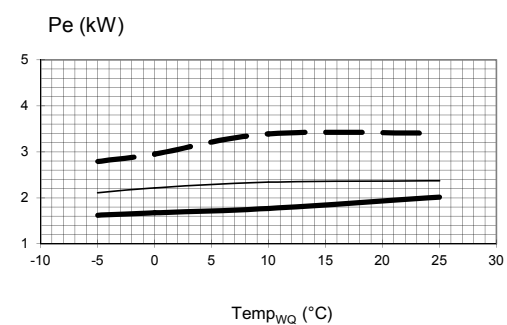
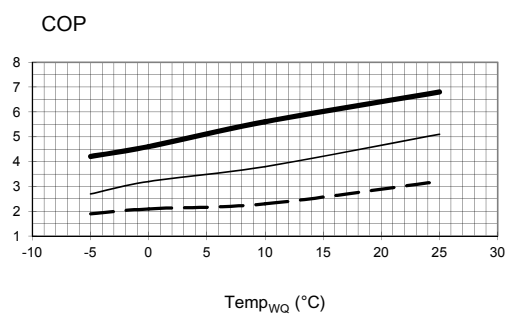
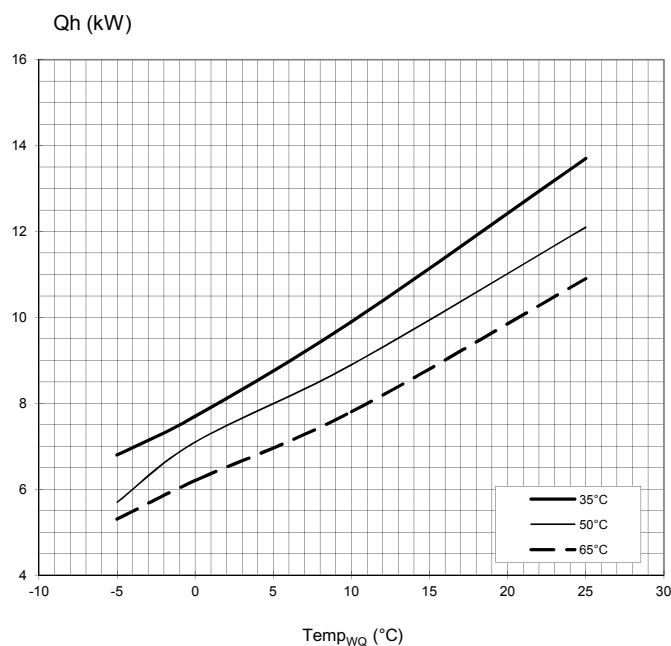
823060b

Legend:	UK823000L/170408
V _{HW}	Volume flow, heating water
V _{WQ}	Volume flow, heat source
Temp _{WQ}	Temperature, heat source
Qh	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp _{HW} / Δp _{HW/K}	Free compression, heating circuit / free compression, heating circuit with cooling
Δp _{WQ} / Δp _{WQ/K}	Free compression, heat source / free compression, heat source with cooling



Performance curves

WZS 81H(/K)



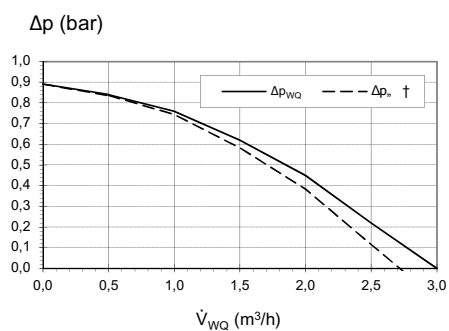
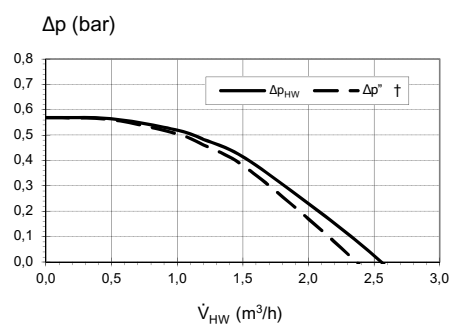
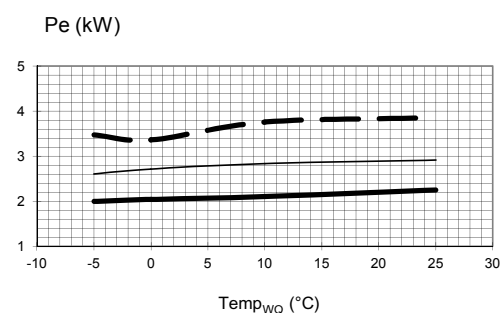
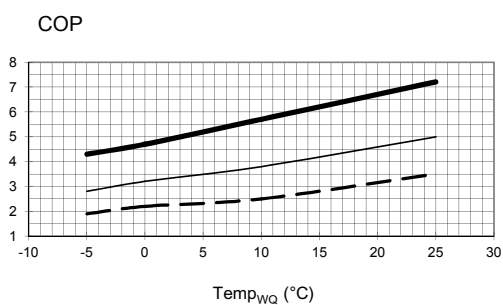
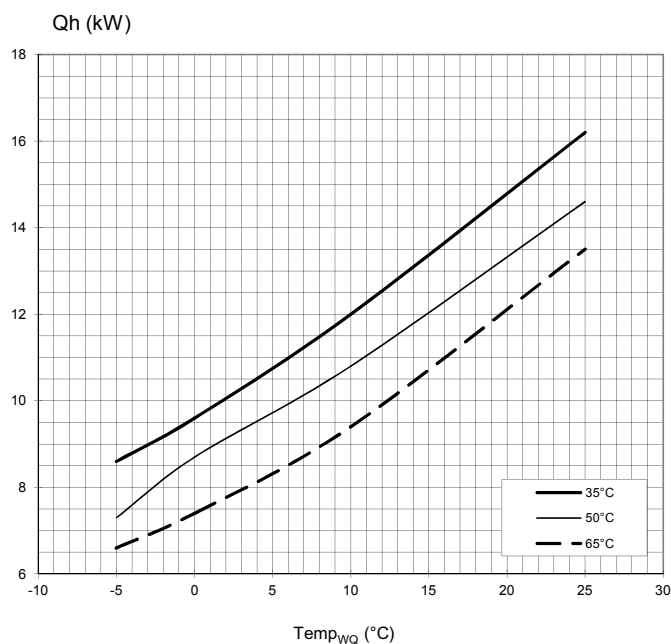
823061b

Legend:	UK823000L/170408
\dot{V}_{HW}	Volume flow, heating water
\dot{V}_{WQ}	Volume flow, heat source
Temp _{WQ}	Temperature, heat source
Qh	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp _{HW} / Δp _{HW/K}	Free compression, heating circuit / free compression, heating circuit with cooling
Δp _{WQ} / Δp _{WQ/K}	Free compression, heat source / free compression, heat source with cooling



WZS 101H(/K)

Performance curves



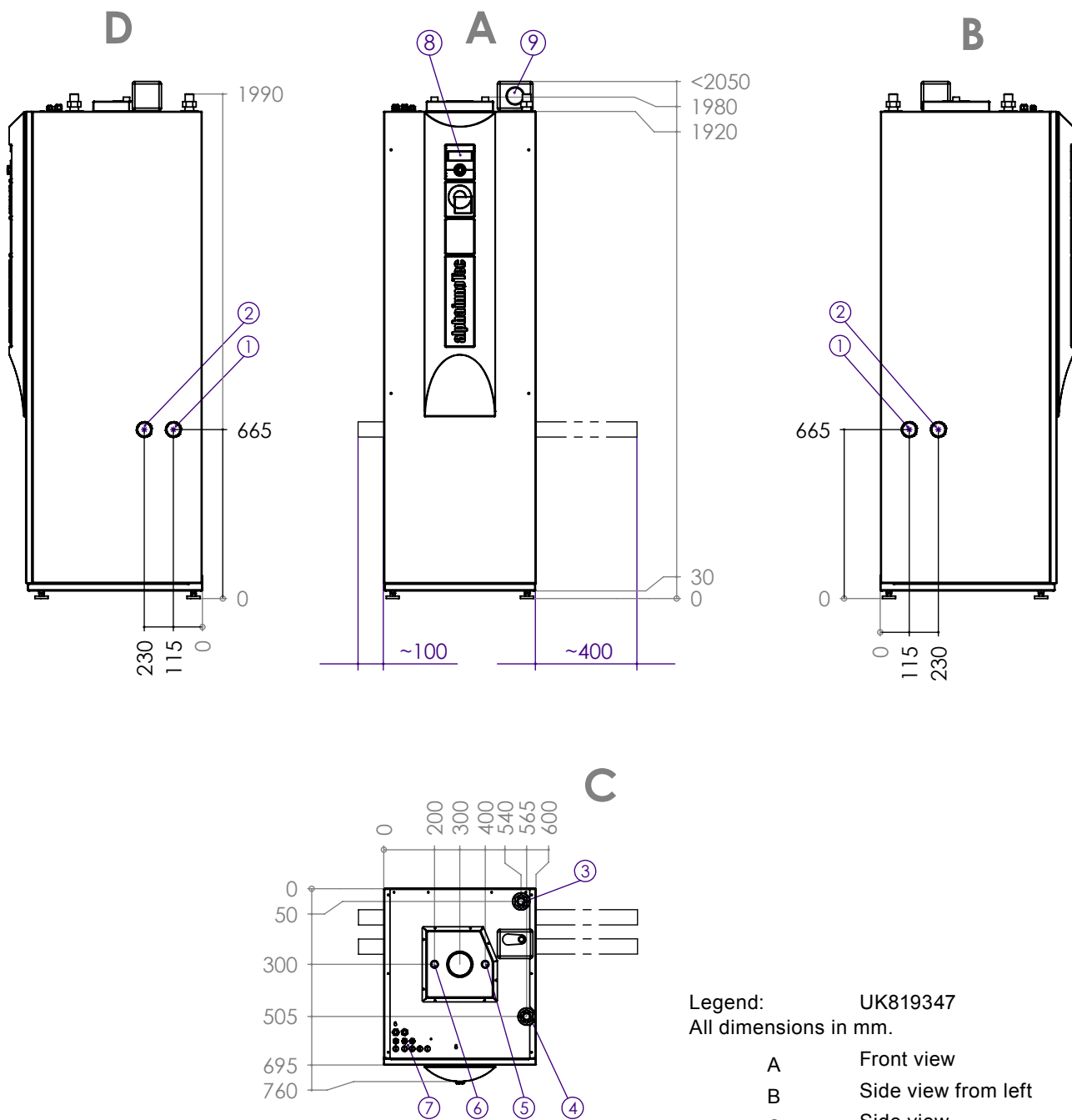
823062b

Legend:	UK823000L/170408
\dot{V}_{HW}	Volume flow, heating water
\dot{V}_{WQ}	Volume flow, heat source
Temp _{WQ}	Temperature, heat source
Qh	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp _{HW} / Δp _{HW/K}	Free compression, heating circuit / free compression, heating circuit with cooling
Δp _{WQ} / Δp _{WQ/K}	Free compression, heat source / free compression, heat source with cooling



Dimensional drawings

WZS 61H(/K) – WZS 101H(/K)



Legend: UK819347

All dimensions in mm.

- A Front view
- B Side view from left
- C Side view
- D Side view from right

- 1 Heat source inflow flat sealing cap nut (optionally right or left): G1"
- 2 Heat source outflow flat sealing cap nut (optionally right or left): G1"
- 3 Heating water inflow (return flow): R1"
- 4 Hot water outflow (forward flow): R1"
- 5 Hot water: R $\frac{3}{4}$ "
- 6 Cold water: R $\frac{3}{4}$ "
- 7 Ducts for electric/sensor cables
- 8 Control element (in extra box)
- 9 Safety component heating circuit (in extra box)

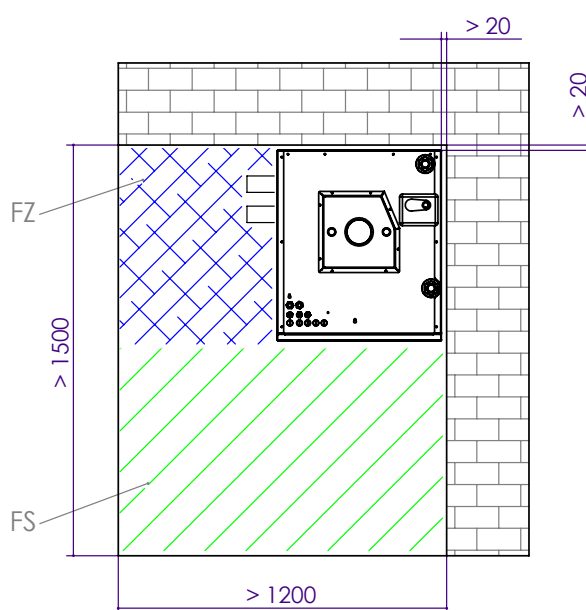
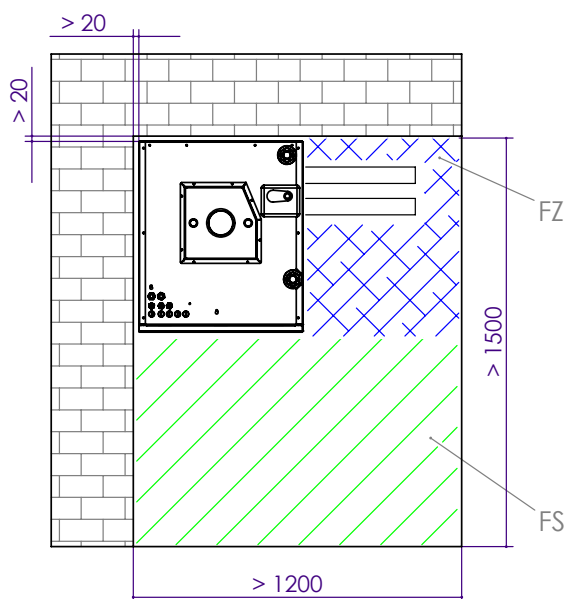
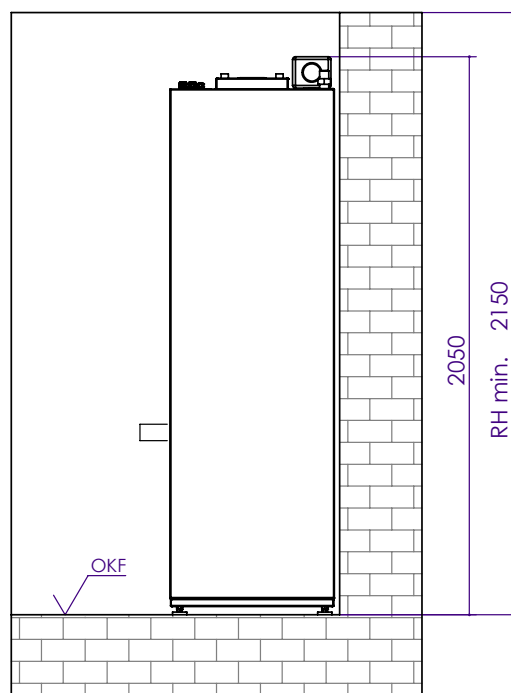
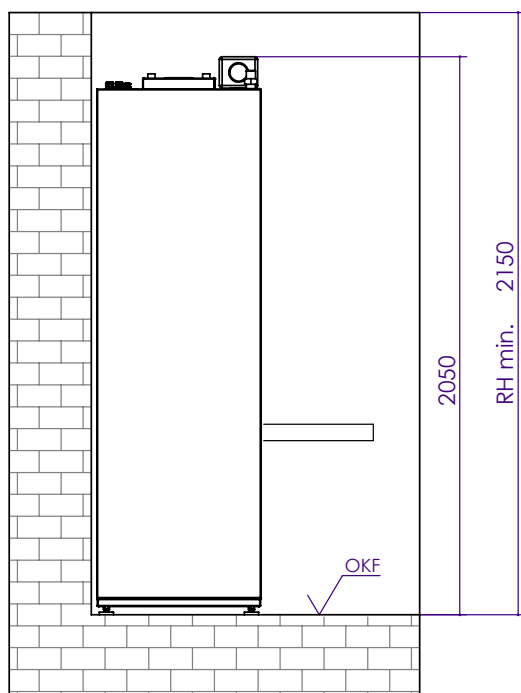


WZS 61H(/K) – WZS 101H(/K)

Clearance dimensions

V 1

V 2



Legend: UK819349

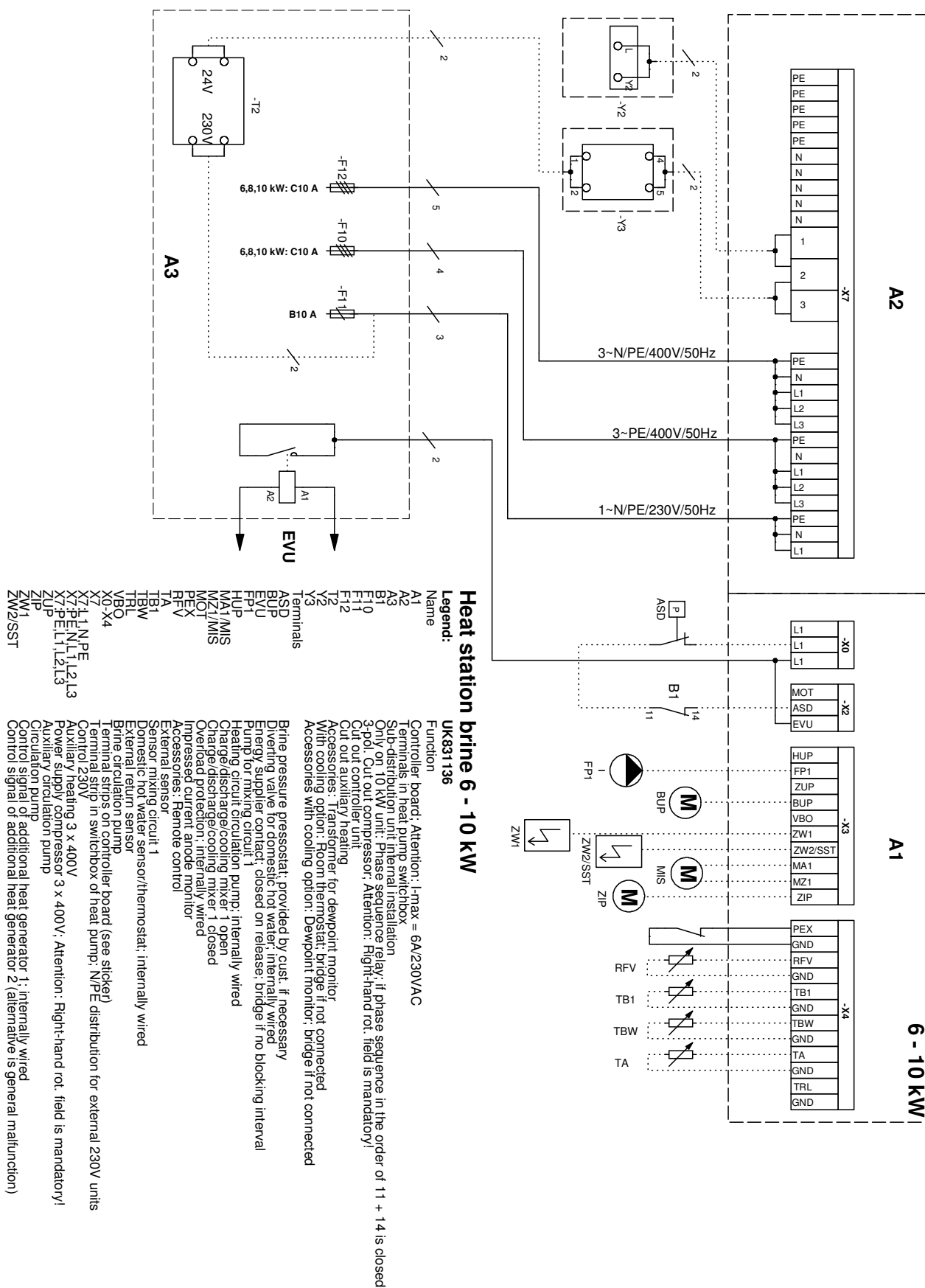
All dimensions in mm.

RH min.	Room height minimum
FZ	Free space for functionally necessary accessories
FS	Free space for service purposes
OKF	Top edge of finished floor
V1	Version 1
V2	Version 2



Terminal diagram

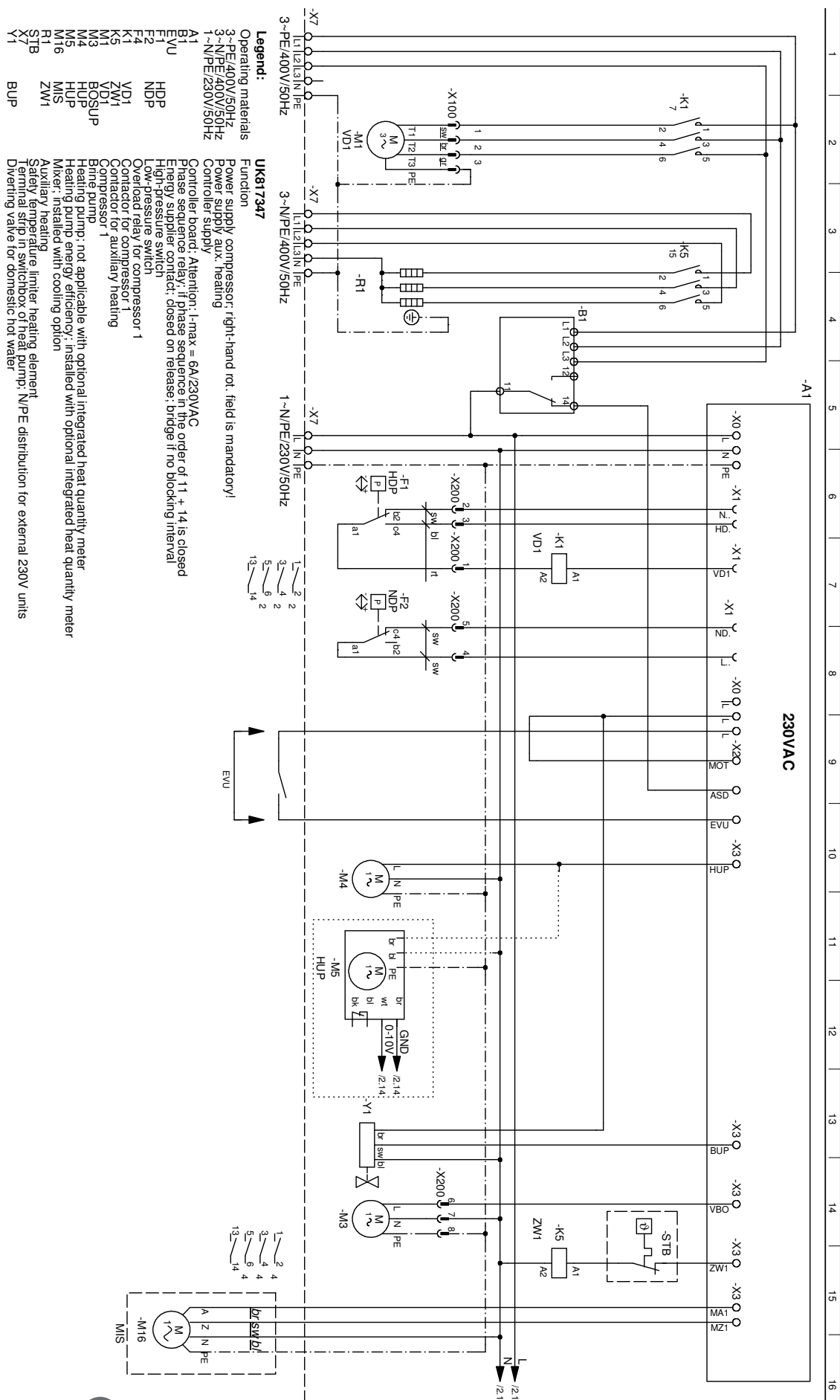
WZS 61H(/K) – WZS 101H(/K)





WZS 61H(/K) – WZS 101H(/K)

Circuit diagram 1/2





EC declaration of conformity



The undersigned
confirms that the following designated device(s) as designed and marketed by us fulfill the standardized EC directives,
the EC safety standards and the product-specific EC standards.
In the event of modification of the device(s) without our approval, this declaration shall become invalid.

DESIGNATION OF THE DEVICE(S)

Heat Pump

Unit model	Number	Unit model	Number
WZS 61H/K	100 555	WZS 61H	100 551
WZS 81H/K	100 556	WZS 81H	100 552
WZS 101H/K	100 557	WZS 101H	100 553

EC DIRECTIVES

2006/42/EG
2006/95/EG
2004/108/EG

STANDARDIZED EN

EN 378	EN 349
EN 60529	EN 60335-1/-2-40
EN ISO 12100-1/2	EN 55014-1/-2
EN ISO 13857	EN 61000-3-2/-3-3

NATIONAL STANDARDS/DIRECTIVES

DE	AT	CH
BGR 500 Teil 2 DIN 8901		NEV (SR 743.26)

Company:

Place, date:

Kasendorf, 27.04.2010

 **alpha**innoTec
Industriestrasse 3, D – 95359 Kasendorf

Signature:



Jesper Stannow
Technical Director

UK818151



General checklist

FOR PREPARATION OF THE COMPLETION REPORT FOR HEAT PUMP SYSTEMS

The general checklist is intended as an aid for the installation and assembly personnel. It makes no claim to be exhaustive. Nevertheless, all items must be checked carefully for compliance.

Heat source air

- Channels closed and sealed ☐ Yes
- Minimum cross-section is met ☐ Yes
- Weather protection screen installed ☐ Yes
- Rotary field of fan ☐ O.K.

Heat source brine / heat source water

- Heat source volume flow ^{1) 2)} ☐ O.K.
- Motor protection setting A
- Rotary field of heat source circulating pump ☐ O.K.
- Heat source filled, air-free and sealed ☐ Yes

Brine

- Frost protection inspected down to °C
- Type of anti-freeze agent (please enter)

Water

- Water quality OK ³⁾ ☐ Yes
- Well units ☐ Yes
- Other heat source ☐ Yes

Heat pump

- Installation of condensate hose ☐ O.K.
- Decoupled from structure ☐ Yes
- Vibration decouplers of heating circuit and heat source connections mounted ☐ Yes

Solar heat system

- ☐ No ☐ Yes
- Solar heat system filled, air-free and sealed ☐ Yes
- Frost protection inspected down to °C
- Type of anti-freeze agent (please enter)

Hydraulic integration

- Integration of the heating heat pump into the heating system corresponds to the planning documents ☐ Yes
- Shut-off devices are correctly set ☐ Yes

Heating

- Volume flow ^{1) 2)} ☐ O.K.
- Heating system designed for maximum °C
- Heating system filled, air-free and sealed ☐ Yes
- Low temperature heating ☐ Yes
- High temperature heating ☐ Yes
- All heating circuits can be opened ☐ Yes
- Forward flow tank ☐ Yes
- Return flow tank ☐ Yes
- Separating tank ☐ Yes
- Additional heating kW

Domestic hot water

Type: Hot-water tank (please enter) ⁴⁾

- with heat pump ☐ Yes
- Request with thermostat ☐ Yes
- Request with sensor ☐ Yes
- Volume flow ^{1) 2)} ☐ O.K.
- Connections sealed ☐ Yes
- Exchanger area m²
- Nominal contents l
- Electric flange heating kW

Control / electrical connection

- All electrical components are permanently connected in accordance with the installation and operating instructions and the requirements of the electricity supply company (not a construction site connection) ☐ Yes
- Clockwise rotating field observed ☐ Yes
- All sensors are present and correctly installed ☐ Yes

1) checked with specifications. • 2) The minimum volume flow must be ensured through uncontrolled circulating pumps with constant volume flows. • 3) Report of water analysis must be submitted. • 4) No functional guarantee is given if tanks are used which are not made by Alpha-InnoTec GmbH or are not approved for the heat pump type..

- The heating system is filled and pressure tested; the circulating pumps function properly. ☐ No ☐ Yes
- The heat source system is completed, inspected and OK. ☐ No ☐ Yes
- The heating circuit, heat source system and circulating pumps have been bled. ☐ No ☐ Yes
- All volume flows and water flow rates have been checked and are OK. ☐ No ☐ Yes

Checked on:

by:

Signature:

The following applies in Germany and Austria:

Send this general checklist **along with the completed report** to the factory customer service.

Sending the general checklist and the completion report also serves as a request for a technician authorized by the manufacturer to commission your heat pump.



Completion report

COMPLETION REPORT AND REQUEST FOR FACTORY COMMISSIONING

During factory commissioning, the system will be inspected to ensure that it is functioning properly. This ensures that all factory specifications have been checked and that the system can operate reliably over an extended period. The factory commissioning involves costs and is mandatory for extension of the warranty services.

☐ INITIAL COMMISSIONING ☐ REPEAT COMMISSIONING

Heat pump type / serial number		Regulator type	
CONTRACTOR		END CUSTOMER / OPERATOR	
<input type="checkbox"/> electric <input type="checkbox"/> heating			
<input type="checkbox"/> other company			
Company			
Contact person		Last name First name	
Street address		Street address	
Postcode Head office		Postcode City	
Phone		Phone	
Preferred date: *)		Alternate date: *)	
Date Time		Date Time	

*) The contractor must submit the completion report **along with the completely reviewed general checklist I4 business days** prior to the desired date of commission.
If there is a conflict with the date, you will be contacted by phone.

I hereby confirm that all preliminary work required for commissioning has been carried out and completed.
The system is ready for operation.

Requested commissioning

IBN (Art.-Nr. I600210I) <input type="checkbox"/>	IBN P5+EW (Art.-Nr. I600250I) <input type="checkbox"/>
IBN 5+ (Art.-Nr. I600220I) <input type="checkbox"/>	IBN WP + LG5+ (Art.-Nr. I600090I) <input type="checkbox"/>
IBN 5+EW (Art.-Nr. I600230I) <input type="checkbox"/>	IBN L (Art.-Nr. I600500I) <input type="checkbox"/>
IBN P5+ (Art.-Nr. I600240I) <input type="checkbox"/>	IBN L EW (Art.-Nr. I600270I) <input type="checkbox"/>
Free IBN on the basis of the sales campaign <input type="checkbox"/>	

I, the undersigned, hereby request commissioning in return for a fee.

Invoice to ☐ Contractor ☐ End customer / operator

Location	Date	Name (block letters)	Signature	Company stamp
----------	------	----------------------	-----------	---------------

In the event that the system is not ready for operation and if installation work has to be performed on the system by the commissioning technician during commissioning, this will involve charges (billed separately) to the contractor. If the system is not ready for operation, the commissioning technician can request a repeat commissioning, which will involve additional costs. The contractor or an authorized representative must be present during commissioning.

It is absolutely necessary that the operator is present for the one-time, free instruction that occurs during commissioning.

A report will be prepared during commissioning.





Customer service

ADDRESSES IN THE EVENT OF A SERVICE CALL

For a current list and additional partners of the manufacturer, please visit www.alpha-innotec.com.

AT

Alpha-InnoTec Österreich
ECO-WP
Wärmepumpenhandels-ges. m.b.H
Währingerstr. 26
1090 Wien
Tel.: +43 (0) 800 205 852
Fax: +43 (0) 800 205 854
office@alpha-innotec.at
www.alpha-innotec.at

BE/LUX

NATHAN Import/Export N.V.-
S.A.
Lozenberg 4
1932 Zaventem
Tel.: +32 (0) 27 21 15 70
Fax: +32 (0) 27 25 35 53
info@nathan.be
www.nathan.be

BR

THERMACQUA
AV. República Argentina
3021 Conj. 14 Piso L
CEP 80610-260 Portao Curtiba
PR
Tel.: +55 (0) 41 301 566 59
Fax: +55 (0) 41 301 566 59
otto@thermacqua.com.br
www.thermacqua.com.br

CH

ait-schweiz AG
Industriepark
6246 Altishofen
Tel.: +41 (0) 62 74820 00
Fax: +41 (0) 62 74820 01
info@alpha-innotec.ch
www.alpha-innotec.ch

Suisse romande
ait-schweiz AG
ch. de la Venoge 7
1025 St. Sulpice
Tel.: +41 (0) 21 661 31 43
Fax: +41 (0) 21 661 31 45
info@alpha-innotec.ch
www.alpha-innotec.ch

Ticino

ait-schweiz AG
Via alla Torre 2
6850 Mendriso
Tel.: +41 (0) 91 646 08 81
Fax: +41 (0) 91 646 09 91
info@alpha-innotec.ch
www.alpha-innotec.ch

CZ / SK

Tepelná cerpadla AIT
s.r.o.
nám. Republiky 15
614 00 Brno
Tel.: +420 (0) 545 21 40 03
Fax: +420 (0) 545 24 20 90
info@alpha-innotec.cz
www.alpha-innotec.cz

DE

Alpha-InnoTec GmbH
Industriestrasse 3
95359 Kasendorf
Tel.: +49 (0) 9228 99060
Fax: +49 (0) 9228 9906149
info@alpha-innotec.com
www.alpha-innotec.com

DK

ASAP Energy
Tinggaardvej 7
6400 Sønderborg
Tel.: +45 (0) 74 4304 80
Fax: +45 (0) 74 4304 81
info@asap.dk
www.asap.dk

EE

AIT-Nord OÜ
Artelli 10 A
10621 Tallinn
Tel.: +372 (0) 658 08 70
Fax: +372 (0) 650 18 64
info@ait-nord.ee
www.ait-nord.ee

FI

Oy Callidus Ab
Hiekkakiventie 1
00710 Helsinki
Tel.: +358 9 374 751
Fax: +358 9 374 755 05
info@callidus.fi
www.callidus.fi

FR

ait-france
10 rue des Moines
67500 Haguenau
Tel.: +33 (0) 3 880 624 10
Fax: +33 (0) 3 880 624 11
info@alpha-innotec.fr
www.alpha-innotec.fr

HU

Thermo Kft.
Krisztina körút 27
1122 Budapest
Tel.: +36 (0) 135 620 46
Fax: +36 (0) 121 428 68
thermo@thermo.hu
www.alpha-innotec.hu

IE

Origen Office Naas Road
Muirfield Drive, Naas
Road,
Dublin 12
Tel.: +353 (0) 141 919 19
Fax: +353 (0) 145 848 06
info@origen.ie
www.origen.ie

IT

Forti Consult SAS
Zona Artigianale Nord, 8
39040 ORA - BZ
Tel.: +39 04 71 811 460
Fax: +39 04 71 811 461
forticonsult@sistemibz.it
www.alpha-innotec.it

**LT/LV**

UAB TENKO Baltic
Basanavicius g. 45
03109 Vilnius
Tel.: +370 526 435 82
Fax: +370 526 435 83
info@tenko.lt
www.tenko.lt

NL

NATHAN Import/Export
B.V.
Impact 73
6921 RZ Duiven
Tel.: +31 (0) 26 445 98 45
Fax: +31 (0) 26 445 93 73
info@nathan.nl
www.nathan.nl

NO

Alpha-InnoTec Norge AS
Gamle Forusveien 51b
4033 Stavanger
Tel.: +47 (0) 51 6605 95
Fax: +47 (0) 51 6605 94
info@alpha-innotec.no
www.alpha-innotec.no

PL

Hydro-Tech
ul. Zakładowa 4D
62-510 Konin
Tel.: +48 (0) 63 245 34 79
Fax: +48 (0) 63 242 37 28
hydro@hydro-tech.pl
www.hydro-tech.pl

PT

GudEnergy Energias Renováveis,
Lda.
Av. O Século, 21 r/c D.to
2135-231 Samora
Correia
Tel.: +351 (0) 263 655 439
Fax: +351 (0) 263 655 655
info@gudenergy.pt
www.gudenergy.pt

SE

Bjärneroth Teknik
Evas väg 5
280 64 Glimåkra
Tel.: +46 (0) 708 420 544
Fax: +46 (0) 444 222 0
bjarneroth@telia.com
www.btait.se

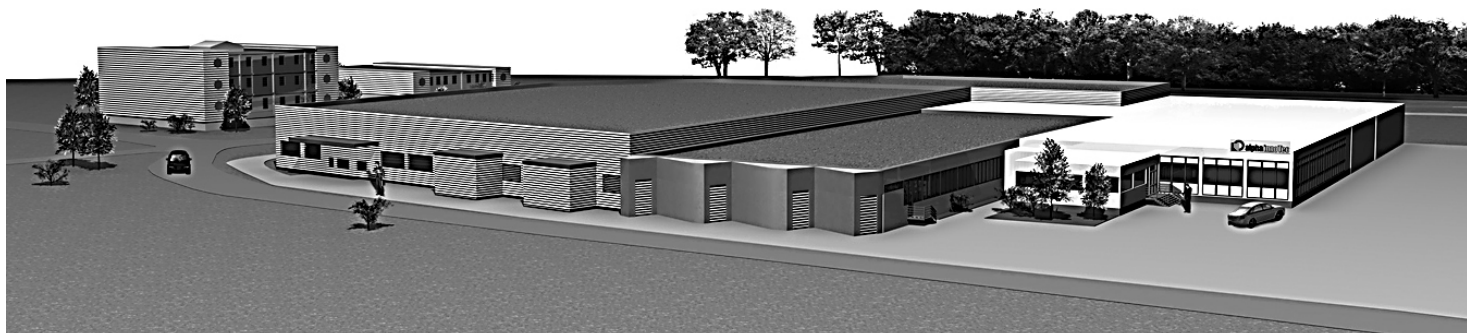
SI

EkoEnergija d.o.o.
Ma e 6
4205 Preddvor
Tel.: +386 (0) 42 555 780
Fax: +386 (0) 42 555 782
info@ekoenergija.eu
www.ekoenergija.eu

UK

Econic Ltd
Marsham
Norwich Road
Norfolk
NR 10 5PQ
Tel.: +44 (0) 16 032 770 40
Fax: +44 (0) 87 091 203 08
info@econicres.com
www.econicres.com

20130113



DE

Alpha-InnoTec GmbH
Industriestrasse 3
D – 95359 Kasendorf

e-Mail: info@alpha-innotec.com

www.alpha-innotec.com